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THE HEALTH ENGINEER

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

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

Volume 3 No 9 Winter 2006

Contents

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.

An Interview with Bob Henare

Chair of Capital & Coast District Health Board

6th April 2006 for IHEEM Journal

Background:
As many of you will remember Bob Henare was the keynote speaker at our annual IHEEM Conference in Wellington on 10 November 2005.

Mr Henare is a registered engineer, a Distinguished Fellow of IPENZ and awarded an OBE for services to business and the community. He is presently Chair of Capital & Coast DHB and serves on the board of a number of other organisations.

Tony McKee recently caught up with Mr Henare (in between two meetings), as a follow up to his presentation titled "Engineers can be Leaders in Governance"

Two particular areas were addressed within Bob's presentation:

1. The part we (as facilities managers and engineers) should play in assisting our various Boards achieve their strategic objectives

2. The need to increase the Boards awareness of their organisations infrastructure and the importance of it in any service provision

These were the general focus of the following interview.

Tony McKee (TMc):

Regarding the first area; you mentioned a number of extremely important planning documents (inc DSP, DAP, etc) and noted the apparent disconnect in strategic planning with provision of health services and strategic asset management planning. Would you care to elaborate on this?

Bob Henare (BH):

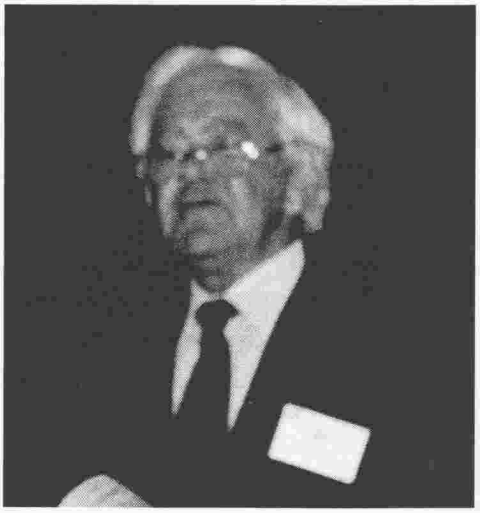
I don't believe the present strategic planning processes adequately engages those involved with the infrastructural assets and primarily because they are invisible.

The issues which surround the infrastructure are not really appreciated by the Board nor most of the service providers in the organisation. Some are reasonably well up with the play but many are not.

The engineering and facilities side of the organisation has got to make itself visible and more integrated and coherent. This will lead to a wholeness of infrastructure management within the organisation. However where this is not happening it will lead to an uneven distribution of input and the infrastructure itself will generally suffer as a result.

I'm very concerned about the transparency of health organisational structures. From a Board perspective you just don't hear from the engineering side, you don't see them, you don't hear anything about them. Often times you don't seem to be able to get any clear picture of what's going on behind the scenes. For example with the building we are sitting in. It was built by contractors but what happens after it is built? The Board wouldn't have a clue. No-one ever puts it in front of us and says that this is what we've got, this is what we have to maintain, or

what is actually involved in terms of asset management, service contracts, etc. etc.



TMc
At what particular stages do you suggest facilities get involved with planning?

BH
It's never too early and probably a matter of how rather than when - and this is difficult to answer of course.

It depends on individuals, how proactive they are and what their approach is. The first lever you usually have is with capital projects and this depends on how you decide to profile yourself in regards to that capital investment.

Most of the organisations I've been involved with (railways, airways, works, etc.), the lead advocate has invariably been the engineers and although they lead they are there as support to the core business. Wherever possible I would encourage them to take the lead role. They are the ones with the training and experience to do this. Without this involvement we will not get the best outcomes.

TMc
As a general observation, our health facilities are becoming bigger and more sophisticated. What do you see as the key drivers of this for us to bear in mind?

BH
The key drivers are generally out of our hands. Technical advances in particular which are usually led from off-shore. This phenomenon invariably means that we follow some way behind what happens off shore and I think that's the key driver in this country. The second one perhaps is the conditions surrounding public pressure to do something about services. Wellington hospital is a case in point where public pressure prevented us trying to provide upbeat services in a down beat facility at Kenepuru.

TMc
We are being encouraged towards Regional collaboration for service delivery, asset development and capital planning. Would you care to comment on Regional collaboration?

BH
Probably still in its infancy to some degree. The real driver for capital expenditure should obviously be service provision and regional should eventually feed into the national capital committee.

It all comes down to affordability. The level of health services we can afford as a region and as a country. The realisation that we can't afford the proliferation of services that we've presently got, especially in the Tertiary.
I believe it is MOH responsibility to coordinate this.

My view is that we need a nationwide approach especially for sub-specialist services. We have examples where there is low critical mass of population with sub-specialists services being provided. These require support structures to keep them there and yet they are not viable. Another example is eating disorders. We can't have eating disorder expertise scattered all over the country. The service resource itself is so scarce, we need to recruit overseas, costs are high, etc.
We simply can't afford the provision of sub-specialist services all over the country; it's ridiculous to even try.

TMc
You spoke about the continued trend towards the delivery of health services from the primary sector, wherever possible.
However we are currently seeing some major investments in building assets at many DHB's that will primarily benefit our secondary providers. Would you like to comment on this?

BH
The shift with the Primary Care Strategy will obviously involve a different set of infrastructural issues, both in terms of how we use what we've got more effectively as well as what we may have to provide in support for the Primary Care system itself. It is important that our engineering departments have input into this shift in service delivery. How we can use what we've got and what we need to provide for more effective outputs in the primary sector. There is an issue of capacity within primary care and of course the possibility of waste with what we've got in terms of existing assets and infrastructure.

Emphasis in the past has been on the secondary but the shift is occurring. We need to maximise what we've got in terms of what's going to happen in the next 5 -10 yrs to services delivery. Our approach has got to change because of our relatively small population and of course affordability issues. We just have to make better use of what we've got.

TMc
Moving on the second area you presented, that of increasing the Boards awareness of the vast asset support structure under its stewardship because it rarely appears on a Boards agenda. You noted that "most things related to asset upkeep tend to remain under the wing of the executive. In other words it is an operating matter - Board keep out!"
There is obviously an enormous amount of money tied up in health facilities nationally (billions of dollars) and we are required to look after these in a professional and responsible manner. To assist this you talked about us increasing our profile. Can you suggest ways of improving our profile within DHB management structures?

BH
I think that the Facilities Manager/Engineer should be a member of the executive management team as a matter of course.
I sit on a number of Boards where this is recognised as best practice. To me it's madness that all the millions of dollars invested in infrastructural assets are not being represented by a person suitably qualified to do this
.
Training of engineers is such that they are able to analysis a problem and present it in a logically, sensibly manner. They are trained to facilitate and coordinate in such a way that takes into account all the different aspects and views and provide an assessment in an impartial manner.

There are a number of areas with the potential for significant improvements under the responsibility of facilities mangers for example; infrastructure, assets (major and minor), facilities, equipment, capital purchases, supplies, service contracts, etc. Those who can have a major impact on efficiency savings are by and large invisible within a DHB when it comes to decision making.

Where it has been left to the service departments to do a proposal they just can't help but be biased and focused on their own particular service, etc and business managers are often well trained in administration etc, but rarely in the skills of undertaking an objective assessment with a logical approach.

Engineers need to take a stand and with a professional perspective, lead these types of assessments and projects. As noted in my presentation engineers should also look to gaining business qualifications as well. More and more this will become the norm.

TMc
Do you think ring-fencing of funds should be considered to ensure assets are sufficiently funded and adequately looked after by DHB's?

BH
From my experience with Mental Health I'm not a huge fan of ring-fencing funds. Ring-fencing can be seen as a defensive and protective approach to funding a particular service.
Budgets should be developed in such a way that those responsible for delivery of the services are actively involved with the preparation of the budgets. Ring-fencing can be a soft solution to poor management of funds; it should be a last resort. It implies we have no ability to present our perspective to achieve equity of funds.

Unfortunately however, I have seen very little evidence of engineers and facilities managers being actively and properly engaged in this process. We have to find other legitimate

Continued on page 19

The New Zealand Institute of Health Estate & Engineering Management

61st Annual Conference

Auckland – City of Sails

Building Programmes and Redesign of Service Delivery

9th & 10th November 2006

Venue:- **Crowne Plaza Hotel**

128 Albert Street

Auckland

Of Interest to those in the Health Sector including:

- Facilities Managers
- Maintenance Managers
- Maintenance Contractors
- Service Engineers
- Biomedical Engineers
- Engineering Consultants
- Property Managers

The Conference: This year's Conference theme is

"Building Programmes and Redesign of Service Delivery."

It seems that every health organisation in New Zealand is at some stage in the process of redesign or building renovations. It is either a case of

- Been there, Done that- Living with the Results
- Currently there, Doing that

Or

- Planning. Soon be there - Dreading that.

What works? What doesn't? With all this past and present work being undertaken the aim of the conference is to share experiences with our colleagues and stimulate our thinking on current and future best practice facilities and biomed engineering management.

The continuing positive feedback we have received in incorporating a **Biomed Forum Day** into the conference has encouraged us to repeat the process on Wednesday 8th November and we have also retained the format of a joint **Facilities / Biomed Annual Conference**. The format of this year's conference will be to present papers which will be of interest to both disciplines on Thursday 9th and split into the 2 groups on Friday 10th for papers of a more specific nature before coming together again for the Annual Dinner.

Conference Programme

A full complement of papers is in the process of being organised over the two days. This year's Conference starts on Thursday morning and will run through to Friday afternoon with the Annual Dinner on Friday night bringing the event to a close. Not that that should be the end of your Auckland experience !
We sincerely hope that delegates from out of town will spend the weekend in Auckland and sample some of the many activities such as Kelly Tarlton's Antarctic Encounter, or for the more adventurous at heart, bungy jumping from the Sky Tower !

Trade Night

A feature of the Conference is the Trade Display on Thursday evening giving delegates the opportunity to view products and services of interest to the Health Industry. Again, we are encouraging companies from the Facilities and Clinical Equipment supply side of the industry to display and there should be plenty to keep everyone interested.

Food and refreshments will be served during the evening.

The Venue

The **CROWNE PLAZA HOTEL** is situated in the centre of Auckland's business district directly above the' Atrium on Elliott' which boasts a 4 level shopping experience of fashion accessories, beauty and health, gifts, souvenirs, lifestyle and many other Shops. The Crowne Plaza is also within easy walking distance to the downtown Viaduct harbour with its vibrant atmosphere, many cafés and restaurants.
Special rates have been negotiated for our Conference and room bookings **MUST** be made directly to the Crowne Plaza Hotel.

Hotel Rates

Accommodation at this time is becoming scarce and a number of rooms have been reserved at the Crowne Plaza. The Hotel rate is $180 plus GST.

Please book accommodation directly with the Crowne Plaza. The reference is NZIHEEM conference - Hannah Callesen.

Partners Programme

As always there will be a Partners Programme offering the opportunity to join in a range of activities, catch up with old friends and meet and make new friends.

Mid-Year Executive meeting

Points of note

Colin Gauld has resigned from the Executive as he no longer works in the health environment. Resignation tabled by Bill MacDougall on Colin's behalf and accepted by the Exec. Our thanks go to Colin for his efforts on behalf of the Institute.

BIOMED Rule change registration –Biomed membership rule change registered in Hamilton. No further action required.

Web calendar of events – Kevin Flower continues to post all info received in the Events page of the web.

The decision was taken to review future direction and strategic plan at a facilitated Exec meeting on June 22nd

Andrew has verbally confirmed with BOC that the Engineer of the Year award will run until the Nov 2008. to be confirmed in writing

There was a rule change agreed at the Nov '04 exec meeting to allow x3 exec members plus an additional biomed. To be developed.

Wellington Conference - Richard has compiled a CD which he passed on to Bill with all the known expertise / knowledge gleaned from previous conferences plus his own experience as an aid to future conference management.

The rules / expectations and criteria for the Study Travel Grant have been developed by Tony Blackler and Tony McKee and were circulated to and agreed by the Exec.

The proposed peer review of the web page was discussed and the decision not to proceed was taken. There are approx 6-7 hits per day at good depth and a decision to remove personal email addresses from the page due to increased spam activity was agreed. Kevin Flower expressed some disquiet about our future use of the Wellington host server

Membership:-
New Applications – Mark Vidulich Hawkes Bay DHB –Biomed Technician,
Paul Frost Atlas Copco – Business Associate Facilities,
Joel Gibb Gillies Hospital – Full Facilities member,
Resignations – Ian Harper - ADHB,
Colin Gauld (from exec position).

Tony Blackler has been nominated by Exec decision as our new EARB representative and EARB have been advised.

BOC AWARD – Richard Whitehead will attend the Adelaide IHEA conference 2006

Conferences :-
2007 – Christchurch – Coordinator Tony Blackler
2008 – Napier has been proposed. Tony McKee will feedback if viable

Electrical Workers Registration Board - General discussion on EST refresher course – A submission has been put in on behalf of the Institute requesting input to the process. Bill and Tony will meet up with the secretary to find out where this is at.

Report completed on page 19.....

Biomed Update

Technical Workforce Strategy

In November 2005 the DHB – CEO Group set up six National Workforce Strategy Groups to assist with identifying development priorities for the identified groups over the next 5 – 10 years.

Initially a person well acquainted with that industry was asked to prepare material outlining the nature of that occupational group and key requirements for core training and development. This material was then forwarded to each DHB for validation and to seek additional information on likely service changes and the impact they will have on the operational environment. Having identified the potential environment respondents were also asked to identify any training requirement to meet the challenges of the changed environment. Finally we were asked to identify the three key work force development priorities.

Bill MacDougall prepared the initial brief for the Clinical Engineering/Biomed Workforce grouping. Once the questionnaire was distributed it was flagged to all working in DHB's.

It is our aim in the near future to collate those workforce development priorities. At training sessions, conferences or regional meetings some of these development priorities may well be addressed.

Medsafe/TGA Joint Agency

Work continues at a Government level towards the Joint Agency. In early June there are scheduled consultative sessions on the "Rules" for operation of the various joint schemes, such as devices, manufacturing and complimentary medicines. A recent press release, following a Ministerial Council Meeting, advised that the Joint Agency was expected to begin in the second half of 2007. Updates on Joint Agency activity may be found on the agency website www.tgamedsafe.org.

Update on AS/NZS3551:

A number of small amendments were considered at a recent meeting of the joint Australian and New Zealand working group. Following processing by Standards Australia it is likely they will be published as an amendment for insertion into your current copy of the Standard.

Initial discussions on the future direction for the standard were focused around the need to cover more readily a wider range of devices and to be more readily utilised by a diverse range of groups from hospital management to practising technicians. With this in mind it is proposed to have a 3-part document:
Part 1 – Covering a holistic approach to management of medical devices.
Part 2 – Specific for particular disciplines electromedical, X-ray, etc.
Part 3 – Generic procedures for testing.

Bio-med update continued from page 14…

Update on AS/NZS3551 (continued):

The suggested approach has still to be endorsed by Standards Australia as a new work project.

The institute has written to Standards NZ endorsing this approach and at the EMECC meeting on 16 May the suggested way forward was endorsed.

Practising License:

Following the EMECC meeting Bill MacDougall and I met with John Sickels, the Registrar of the Electrical Workers Licensing Group, to discuss Practising License requirements for Biomeds.

He has agreed to take our suggested format to the Board for approval in principle.

Insulated Pin Plugs & Integral Pin Devices

A reminder that all new clinical equipment purchased from 6 April is required to have an individual mains plug and power packs supplied with insulated pins.

Clean Air Acts cont.

When such collaboration is successfully employed, the end result will be an integrated, reliable and efficient HVAC solution that provides optimized facility investments, increased comfort levels for staff and patients and improved patient outcomes.

Laura Rygielski is director of the health care vertical market for Trane, headquartered in Piscataway, N. J. She can be contacted via e-mail at lrygielski@trane. com.

Mid Year Exec Meeting – Points continued.

There is a Workforce Strategy Group for the Technical Workforce collating information regarding all Technical health professions nationally. Bill was asked to complete a template prior to circulation around all DHBs for validation and additional comments. Further info will be disseminated to the Institute once this process is initiated.

Richard Whitehead was thanked on behalf of the Institute for his tremendous work in organising the Wellington Conference.

Bob Henare interview continued....

means of achieving this. Develop stronger lines within the DHB?

TMc

Any closing comments for the Institute members?

BH

I would just make two suggestions for consideration by the Institute:

1 With the value of assets we are talking about within DHB's (perhaps the biggest infrastructure asset business in the country) and the need for proper care and management of these, I think it is time to look at one of the Government Board appointees, being an engineer.

Delivery of our health services is dependent (among other things) upon good management and planning for our strategic assets. This would send a very clear signal about the seriousness with which the care and planning of our assets is being taken.

They would an independent engineer with a clearly mandated portfolio. It would not be suitable for that person to also be an employee of the DHB. They would bring the skills and experience from an engineering perspective to that Board. This would be a Government and Ministry issue. Some Boards might already have an engineer as a Board member.

2. The other aspect is the establishment of an Executive Team or Panel within each DHB. Their role would need to be carefully defined but would not only deal with infrastructure and engineering matters but also those issues that might impact on these and those with capital spend. All areas where an engineering approach could lend value to the DHB decision making process.

They would need sufficiently authority to impact the organisation so they are conferred with regarding budgets implications and capital expenditure. Should have primary input into any proposal that requires capital or major operational expense.

Service delivery decisions are often undertaken in isolation. Engineers can have a major contribution to make in assisting with this decision making process, seeing beyond the individual service, integration with other parts of the infrastructure, provision for future needs, rigor around converting service processes into infrastructural solutions, project management, and most importantly ensuring proposed efficiency gains have been achieved.

I would be prepared to assist in follow up on these suggestions if the Institute wanted me to. Should this be supported we would need to develop a specification and terms of reference in a paper for presentation.

TMc

Thank you for taking time from your very busy schedule to meet and we really appreciate the commitment and interest you've shown in supporting the Institute.

NZIHEEM Regional Meeting, Northern South Island

Saturday 20th May 2006

Bright and early Saturday morning, my partner Val, my son Simon (9 yrs) and I set off for the wild West Coast and the regional meeting of the NZIHEEM. This meeting was hosted by Gary Sara of Greymouth Hospital.

The drive across the great divide is getting easier everyday. There are still a couple of windy parts to the road but it really is a straight forward drive. We were making good time and stopped for a cup of tea and a sausage roll at Arthur's Pass. The café there has improved as much as the road over the years and is a really nice place to stop. If you have time there are a number of short walks you can do or simply go up and down the main road and take in the magnificent scenery.

Over the pass itself, and the new(ish) viaduct and then through Otira. You will notice that the rivers start flowing the wrong way from this point on. Still can't get used to that! In Canterbury they all flow to the East!

We took the scenic route around Lake Brunner and arrived in Greymouth with enough time to check into our motel unit, have a cuppa and then head to the hospital to meet with the others.

After the group photo was taken, the partners (and Simon) headed off to Shantytown. Reports back were that the train ride was good, all the exhibition buildings were well presented and there was plenty of gold "in them thar hills". After a cuppa the group then headed back to Greymouth via some of the back roads and bush that can only be the West Coast!

Meanwhile back at the hospital, we were treated to a presentation on the life of the only resident Anaesthetist on the Coast. Malcolm Stuart, who is also a member of the Board, explained how little he knew about engineering but that he didn't need to know anything, because he relied on Gary, Wayne and the other maintenance staff to know all that stuff for him. Malcolm went on to explain how big the area was that the Grey Base Hospital covered and interestingly when measured it is the same length as Auckland to Wellington. So quite an area to cover from one small location. As the road to Christchurch is often impassable and air travel is out of the question because of weather, the staff in Greymouth are quite often on their own.

The rest of the meeting covered a number of topics about the Institute and how we can help each other out more, how often we should meet and so on. Always very well worth going to, as we can always learn something from each other.

Pre-dinner drinks and nibbles were next when we meet up with the partners again. A quick change of clothes and then into the dinning room for dinner. The food was great the company very good and the conversations flowed well. We had a couple of interruptions, with text messages keeping us updated on how the Crusaders were doing. After dessert, a few moved to the lobby to watch the final part of the game on the television. As it was getting on, we excused ourselves and got Simon back to the unit and to bed, and watched the final part of the game there.

Sunday morning, and we had a little bit of rain falling. Some may say chucking it down, but to a Coaster it wasn't that bad! Breakfast in the restaurant, say goodbye to those left and then back over the hill and home. A most enjoyable couple of days away.

Brendon Groufsky
Electrical Engineer
Canterbury DHB

This happy group were the members and partners who attended the recent regional meeting at Grey Hospital.

Another photo from yesteryear, this time it is of the delegates at the 1982 Conference at Whakatane thanks again to Harley Gardener

Quite a few big black bushy beards on show
Front row – Percy Hills, John Wray, ? , Tony Blackler, Jim Meldrum, Reg Baran, Bill Armstrong, Tom Adson, ? , ? , ?.

Second row - ? , ? , ?, ? , Peter Stevenson, ? , Neville Burridge, ? , ? , Scott Cormack

Third row - ?, ? , Peter Duncan, Keith Sangster, ? Tom Sawyer

The Australian ANZEX delegate this year is Kevin Moon who is now a consultant within the health industry. He has forwarded the following details about his career up to the present.

Kevin Moon

Brief Biography
Kevin Moon is a Mechanical Engineer who holds a nursing post graduate Certificate of Sterilization and Infection Control. He has worked within the health industry for 20 years, the majority of that time as a Hospital Engineer. He now consults within the health industry on both facilities design and specialised engineering areas that cross the boundaries between clinical and engineering. His expertise is in the field of health facilities impact on infection control and the
systems required to maintain safe conditions. This includes areas such as infectious diseases isolation rooms, operating theatres, clean rooms, laboratories and environmental microbiology.

PERSONAL DETAILS :-

QUALIFICATIONS
Diploma of Engineering – Royal Melbourne Institute of Technology.

Certificate of Sterilization and Infection Control - Mayfield Education Centre

CAREER SUMMARY
Consultant Mechanical Engineer. May 2000 – current. Facilities Engineering

Project Manager. June 1999 – May 2000. North Western Health Care Network.

Senior Projects Engineer. June 1989 – June 1999. Austin & Repatriation Medical Centre.

Second Assistant Engineer. November 1986 - June 1989. Mt Royal Hospital.

Honorary Member Infectious Diseases Department, Austin Health.

PROFESSIONAL AFFILIATIONS.
IHEA. Institute of Hospital Engineering Australia
ASHRAE. American Society of Heating, Refrigeration & Air Conditioning Engineers
VICPA. Victorian Infection Control Professionals Association

We are planning to leave Melbourne on Tuesday 7 November and travel toAuckland for the conference. After the conference we would like to spend about one week touring the major hospitals on the Nth Island then move to the South Island.
My wife Heidi will be accompanying me. We are hoping we will have our 16year old daughter join us after about 1.5 weeks. We then plan to take another week to tour the South Island.
My main interests are infection control, infectious diseases, risk management, energy conservation (sustainability) and to a lesser degree OHS

RULE CHANGES PROPOSED

by Kevin Bardsley, Executive Member (Waikato)

The last rule change registered was that voted for at the AGM in 2004 to admit the category of **Biomedical membership** to the NZIHEEM. This change (**Rule 3C**) was adopted at the AGM and in 2005 was signed by a JP and registered with the Department of Commerce.
There is now before us a **proposal** to change **Rule 10 and 11** to increase executive committee representation should the need arise, to avoid a predominance of either Biomedical or Facilities members on the executive committee.
The proposed change to **RULE 10** and **11** allows and requires the normal three executive members to be increased by one (to four) should the need arise.

PROPOSED CHANGE TO THE RULES OF THE NZIHEEM (INC)

READ THE RULES ON OUR WEB SITE.

AMMENDED RULE 10a (v) Change *"Three committee members." to read "...Normally three but up to four committee members in special circumstances, see rule 11I(iii)..."*

NEW RULE 11I (iii) *In the event that at the appointment of the three committee members under Rule 10A(v) and Rule 11I(ii) there is no biomedical member represented, the executive committee must move to add a fourth member to the committee from the next highest polling biomedical member. If no such member is available, rule 11(L) shall apply to the appointment of a fourth committee member who shall be a biomedical member.*

NEW RULE 11I (iv) *In the event that at the appointment of the three committee members under Rule 10A(v) and Rule 11I(ii) there is no facilities member represented, the executive committee must move to add a fourth member to the committee from the next highest polling facilities member. If no such member is available, rule 11(L) shall apply to the appointment of a fourth committee member who shall be a facilities engineer.*

The proposed change to Rule 10 and 11 ends.

It is proposed that this rule will be voted upon at the AGM in Auckland 2006

Continued from page 8...

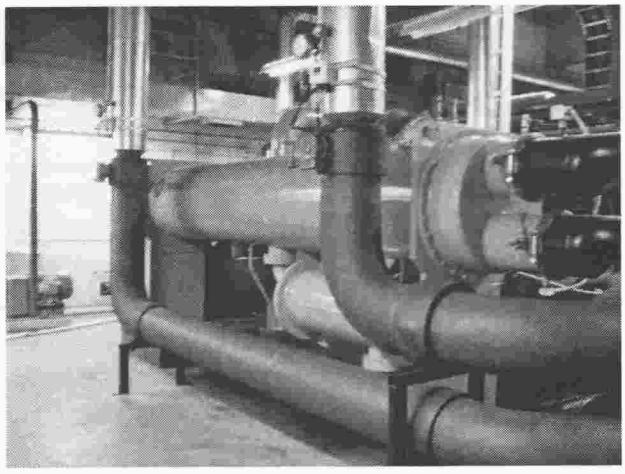
Otherwise, the hospital accounts department may be unaware that some elements of works are deductible and unnecessary VAT will be imposed.

For the record all professional fees are VAT deductible and other works that could be described as repairing by replacement of existing systems.

WELLINGTON HOSPITAL T.E.C.

The Wellington Hospital Total Energy Centre rising up out of the steep slope of Mein Street

Conceived back in the days of Eric Hailstone during the seventies the T.E.C. (Total Energy Centre) was built to answer growing concerns about energy costs particularly in a large inefficient establishment like Wellington Hospital.
The basic premise was that if one could utilise low cost natural gas to generate power to meet all ones electrical needs the waste heat available from the generator cooling water and engine exhaust could then be utilised for central heating and domestic hot water. A very large Co-Gen arrangement.
The T.E.C. building which dominates the upper part of Mein Street is a concrete monolith which could never be termed as beautiful. It would be more often referred to as 'functional' or even ugly with its eight chimneys sprouting out of it's roof line among the fanciful air vents.
Inside there is space and height above the generator floor with four Miralees dual fuel engined generators next door to a space with chiller units with the older ones being replaced by large absorption units. Within the same building there are large H.W. boilers and a very long switchboard which allows the hospital to draw its electricity requirements from the national grid or if the generating plant is being run, to put it's excess production back into the grid. It is run by contractors at the moment although it's present day viability is very doubtful except as an emergency supply which could keep the whole hospital functioning after a disaster.



One of the older chiller units

The following is the entry in the IPENZ Engineering Heritage site.

Name – Total Energy Centre, Wellington Hosp.

Category – Engineering Plant (e.g. railway locomotive, car, plane)

Description – This is the largest total energy centre in the southern hemisphere supplying a hospital, and the only such complex to supply a New Zealand hospital.
This "Total Energy Centre" was in 1981 the first to service a hospital in New Zealand and when designed was the largest in the Southern Hemisphere.

Total energy is an all-embracing term which describes a scheme in which maximum benefit is taken from the energy available in the fuel used for the system. In the case of Wellington Hospital the principal fuel used is natural gas, supplemented with diesel fuel oil, which is also used as a standby fuel.

On site the fuel is used to propel a prime mover which generates electricity. Heat is recovered from the engine-jacket cooling-water circuits and used to preheat the lower temperature hot-water circuits within the complex. High-grade heat is recovered from the engine exhausts and is used as a source of heat for a high-temperature hot-water distribution system.

The feasibility of the concept and selection of equipment could be assessed only after exhaustive evaluation of the energy demands likely to be encountered on the final redevelopment site of the Wellington Hospital. The energy demands were assessed from a detailed computer analysis which evaluated the effect of the local climatic conditions on each building proposed for the site.

After the viability of the scheme was established, approval for design to proceed was given with tenders being called in December 1975 for the prime movers and associated heat-recovery equipment. This equipment was to satisfy the assessed energy demand of 8.3 M.W. daily electrical peak, while refrigeration demand was 10.12 MW and peak winter heating demand 12.31 MW. This latter heat demand includes steam, high-temperature hot water for heating and process loads.

Since this particular energy complex is serving a hospital, a high importance factor applied to maintaining services support for the medical functions which were likely to be tested to capacity following some major disaster.

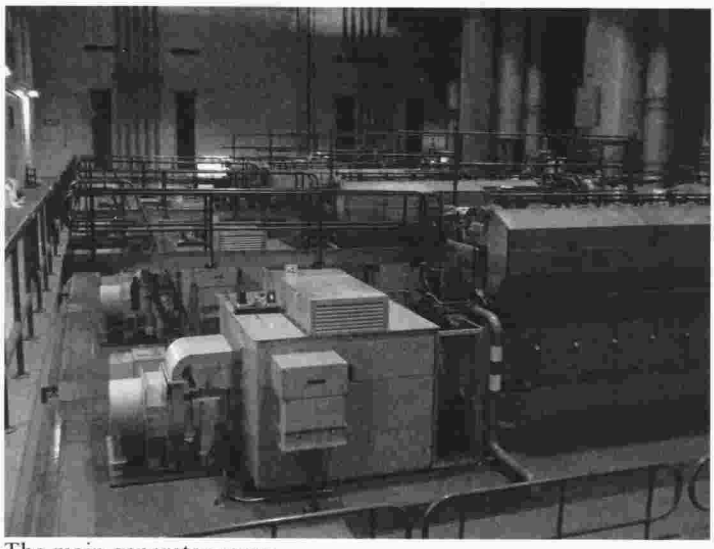
Owner: Wellington Area Health Board

Consulting engineers: Kerslake & Partners, and Edwards Clendon & Partners

Contractors: Fletcher Development Construction Ltd and Hawker Siddeley Engineering Pty Ltd

Location: Mein Street, Newtown, Wellington

http://www.ipenz.org.nz/heritage



The main generator room.

Half of the switchboard.