The Journal of The Institute of Hospital Engineering January 1985

HOSPITAL ENGINEERING

International Federation Issue

- IFHE 8th International Congress, Melbourne, Australia
- A large scale hospital in suburbs of Tokyo
- The development of critieria for testing hospital designs

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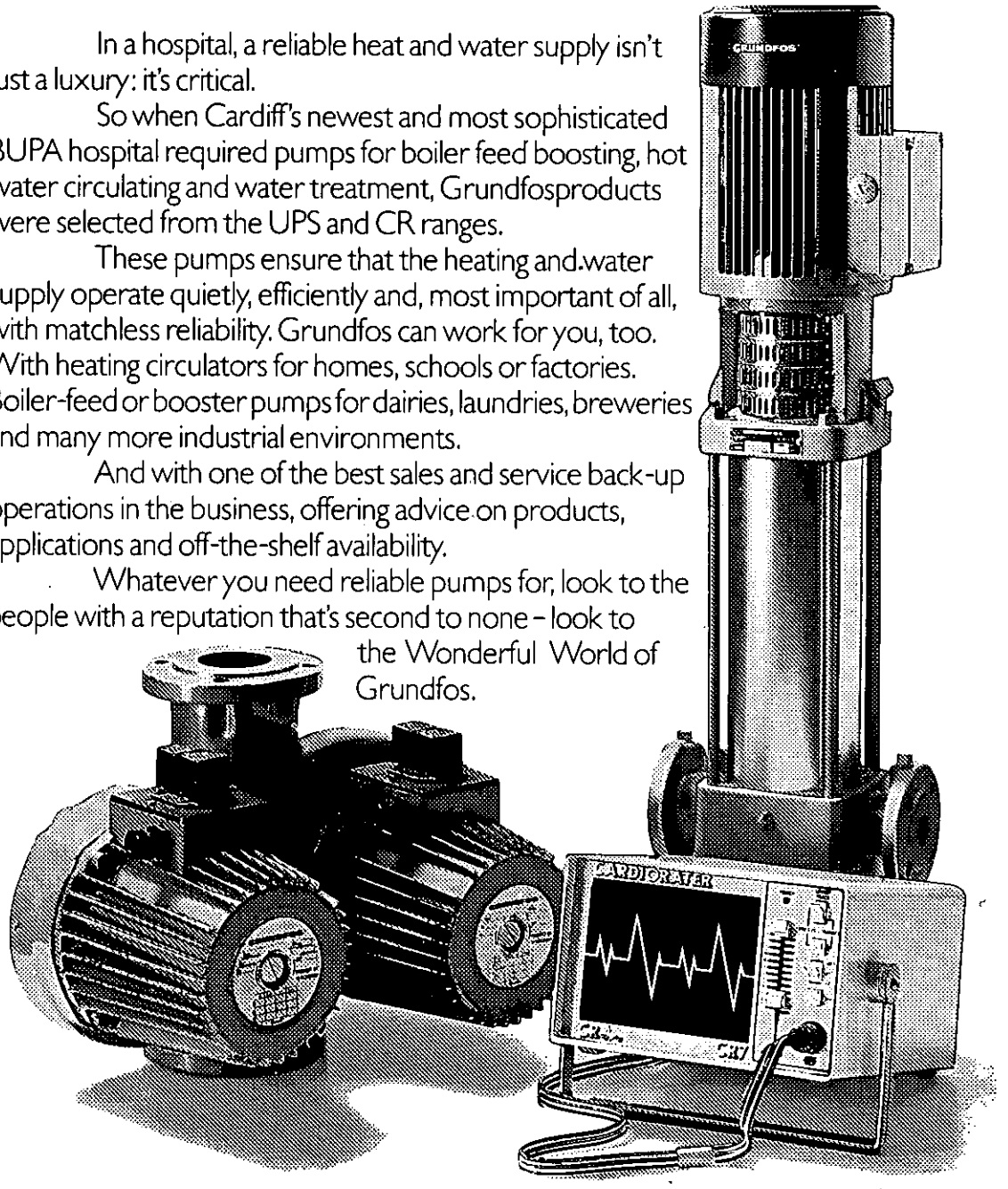

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HOSPITAL ENGINEERING

The Journal of The Institute of Hospital Engineering
and of
The International Federation of Hospital Engineering
I.F.H.E.

Volume 39 No 1 International Issue No. 52 January 1985

Front cover: Robert Cottrill, President of the IFHE giving his opening address at the 8th Congress.

The International Federation
of Hospital Engineering
126 Albert Street London NW1 7NF
England

Institute News

East Midlands Branch meeting

The Institute of Hospital Engineering held their September meeting at the Electric Centre, Broadmarsh, Nottingham. David Atkinson, from the East Midlands Electricity Board, was the guest speaker. He gave an outline of the potential energy savings which could be achieved by the use of heat recovery techniques. Typical heat recovery schemes were described and reference made to the role of heat pumps. Swimming and hydrotherapy pools are relatively high energy users and considerable savings are possible by introducing the heat recovery/heat pump concept.

Watt Committee

The Watt Committee on Energy is pleased to announce that it has made an agreement with the Manpower Services Commission by which the Watt Committee will provide advice and assistance to the MSC Open Tech Unit and to the energy projects of the Open Tech Programme. The Watt Committee has undertaken:

(a) to establish an effective collaboration with the energy projects;

(b) to provide an effective advisory service to the energy projects and to act as a validating influence over such of the materials produced as the projects may wish to submit to the Committee;

(c) to help the Open Tech Unit in its coordination and evaluation of its open learning programme in the field of energy management and control. In particular:

(i) to advise the Open Tech Unit of any perceived imbalances or needs within the programme; and

(ii) to identify relevant quality material and resources that could be of benefit to the energy projects;

(d) to promote the work of the energy projects and to encourage the dissemination of the materials produced to a wider audience.

Further information from The Secretary, Watt Committee on Energy Ltd, 18 Adam Street, London WC2N 6AH. Tel: 01-930 7637.

British Standards Institution

The following publications will be of interest to hospital engineers and are now currently available.

BS 6530: 1984 IEC 336:1982
BS Methods for determining the characteristics of focal spots in diagnostic X-ray tube assemblies for medical use. Gr 8.

BS 5724: Part 2: section 2.1:1984
BS Medical electrical equipment Part 2. Particular requirements for safety. Section 2.1 Spec. for medical electron accelerators in the range 1MeV to 50MeV. Gr 7.

Welcome back to IHEX 22-23rd May 1985. Hotel Majestic, Harrogate.

The organisers of IHEX '85 look forward to welcoming visitors to a bigger and even better hospital engineering exhibition at Harrogate this year. The success of IHEX '84, held last year in conjunction with the 40th Annual Conference of the Institute, has led to confident plans for many more exhibitors, more extensive displays, and for the display of large exhibits and working models. There will be a greater integration with the Conference. IHEX '85 will cover the latest developments in all aspects of hospital engineering, including building and construction, hospital equipment and technology, communications, computers, and manufacturers' supplies. And the organisers plan to attract not only those at the head of engineering departments, but to facilitate visits by engineers at all levels. It is hoped that IHEX '85 will have many visitors apart from Conference delegates, as the exhibition will be of interest, provide information and provoke discussion for everyone who works within the field of hospital engineering.

See the February issue for more information on IHEX '85 and the 41st Annual Conference

FORTHCOMING BRANCH MEETINGS

North East Branch: *Hon. Sec. G. Baxter Darlington (0325) 460100*
February 12th Visit to Sunderland Eye Infirmary.
March 12th Telecommunications Lecture, Hexcham.

East Anglian Branch: *Hon. Sec. J. A. Parker Norwich (0603) 611 233*
January 26th Presentation by Frenger Troughton Ltd, Newmarket Hospital.
March 9th Annual General Meeting, St. Andrews Hospital, Norwich.

Southern Branch: *Hon. Sec. R. P. Boyce Chichester (0243) 781 411*
March 9th Annual General Meeting preceded by 'World Energy Supplied and Alternative Sources' by Technical Representative of CE&B. St. Leonards Hospital, Nr Ringwood.

North West Branch: *Hon. Sec. E. A. Hateley Manchester (061) 236 9456 ext 266*
February 14th Visit to Moorlite Limited, Ashton under Lyne.
March 8th Annual Dinner Dance, Worsley Court House.
March 19th Annual General Meeting followed by talk on the NW Water Authority.

Midlands Branch: *Hon. Sec. W. Turnbull Birmingham (021) 378 2211 ext 3590*
January 22nd Site Generation of Medical Oxygen, presented by N. Gaskell, Managing Director, Medical Gas Installations, Post Graduate Medical Centre, Queen Elizabeth Hospital.
February 20th Hospital Lighting and the CIBS Guide, presented by G. Daniels, Moorlite Electrical Limited, venue as above.
March 6th Annual General Meeting and technical presentation by West Midlands Gas, West Midlands Gas HQ, Wharf Lane, Solihull.

West of Scotland Branch: *Hon. Sec. R. W. Gardner Glasgow (041) 204 2755 ext 2710*
January 31st Operating Theatres and Pharmacies by Mr. W. White, Boardroom, Glasgow Royal Maternity Hospital.
February 28th 'The Use of Oxygen Concentrators to Provide Oxygen to a Hospital Pipeline System' by Mr. N. Gaskill, Oxymaster Ltd, venue as above.
March 22nd Annual Dinner Dance.
March 28th Annual General Meeting, Glasgow Royal Maternity Hospital.

East Midlands Branch: *Hon. Sec. E. A. Hall Nottingham (0602) 475783*
January 22nd The Design and Management of Telecommunications Systems within Hospitals, a presentation by Mr. A. Wiliams and Mr. D. Lomax, Trent RHA, Southwood Block seminar room, Middlewood Hospital, Sheffield.
March 6th Annual General Meeting followed by 'Totem Total Energy System' a presentation by Fiat Energy (UK) Ltd, Committee Room, Balderton Hospital, Nr Newark.
Please contact the respective Branch Secretary should you wish to attend any of the above meetings.

THE INSTITUTE OF HOSPITAL ENGINEERING ONE DAY SYMPOSIUM

ENERGY MANAGEMENT

The Small Hall, Kensington Town Hall, Hornton Street, London W8

Wednesday 13th March 1985

The ever increasing costs of energy to building owners require continous vigilance to avoid unecessary waste and expense. Many techniques are being developed daily to assist managers to achieve energy savings.
This Symposium discusses the whole spectrum of energy management from the funding of systems through to actual on the ground experiences of such systems in use.

PROGRAMME

10.00 Coffee

10.30 OFFICIAL OPENING by L. G. HADLEY ESQ, CEng, FIMechE, FInstE, FCIBS, MConsE, FIHospE, President, The Institute of Hospital Engineering
CHAIRMAN for the day: DR. J. H. CHESTERS, OBE, FEng, FRS, Chairman, The Watt Committee on Energy.

10.40 ENERGY MANAGEMENT – THE GOVERNMENT ROLE
Speaker: ALAN WILLIAMS ESQ. BSc, CEng, FInstE
Energy Efficiency Office Department of Energy.

FUNDING AT REGIONAL LEVEL
Speaker: C. ASTLEY ESQ. CEng MIMechE MCIBS FIHospE
Regional Engineer Oxford RHA

DELETING CONSENSUS MANAGEMENT FROM ENERGY MANAGEMENT

11.40 Speakers: R. D. WILSON ESQ, CEng, FIMarE, MCIBS, FIHospE
District Works Officer South Manchester Health Authority
JOHN GILL ESQ, CEng, FIHospE, AMIE
District Engineer South Manchester Health Authority

12.10 OPERATING EXPERIENCES AND FUTURE POTENTIAL OF THE ENERGY MANAGEMENT SYSTEM AT THE JOHN RADCLIFFE HOSPITAL, OXFORD
Speaker: JOHN WINN ESQ, TEng, MIHospE, MIPlantE
Oxfordshire Health Authority

12.45 Lunch

14.15 MONITORING, TARGETING, REPLACEMENT AND CONTROL AT DISTRICT AND UNIT LEVEL
Speaker: MICHAEL SNEDKER ESQ
Member, National Energy Management Advisory Council
Chairman, Devon and Cornwall (SW) Energy Management Group Fuel Efficiency Officer
Cornwall and Isle of Scilly Health Authority

14.45 ENERGY MANAGEMENT WITHIN MARKS AND SPENCER PLC
Speaker: GEORGE COLMAN ESQ, CEng, MIMechE, MInstR
Marks and Spencer PLC

15.15 TECHNICAL OVERVIEW
Speaker: V. E. SKEGG ESQ, CEng, MIMechE, MIMarE, MCIBS, MInstR

15.45 OPEN FORUM

16.30 Close

TICKET APPLICATIONS

To: The Secretary, The Institute of Hospital Engineering, 20 Landport Terrace, Southsea PO1 2RG.

Please send me ..... ticket(s) for the ONE DAY SYMPOSIUM entitled 'Energy Management' to be held on Wednesday 13th March 1985.

I enclose £ ..... to cover the cost. Ticket to include morning coffee, lunch and VAT. Member: £40.25 Non Member: £46.

No fees will be returned for cancellations (in writing please) received after midday on Thursday 7th March 1985.

VAT Registration No. 339 3963 20

NAME (in capitals please) .....

ADDRESS .....

.....

Position.....

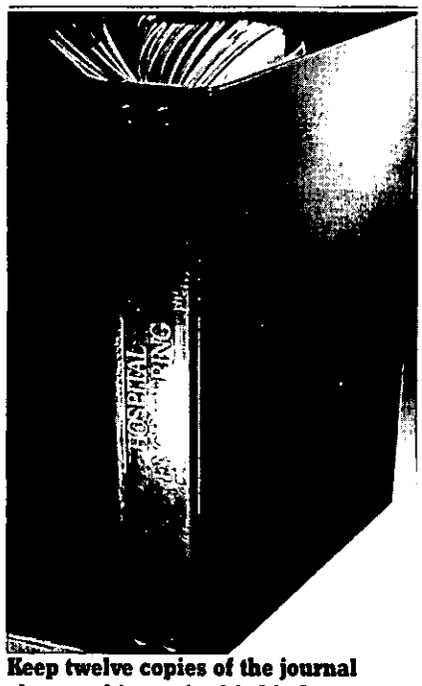
Non Member (please tick).....

NB. Please note that tickets are available ONLY from The Institute of Hospital Engineering (TN: Portsmouth (0705) 823186).

IHSM Day Conference and Study Days

The Institute of Health Services Management has arranged a series of events to help those who are grappling with the many problems confronting the NHS at a time of rapid and unprecedented change.
(1) The Practical Implemention of Griffiths at Unit Level
Day Conference. London — 1 February 1985
(2) Management Information Pilot Project (MIPP); Implementation of Körner
Study Days
Leeds — 30 January 1985
London — 5 February 1985

Full details of the programmes and other relevant information, together with application forms, are available from The Institute of Hospital Engineering Offices.



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IFHE News

The Hospital Engineering Association of Japan — an introduction

The Hospital Engineering Association of Japan was welcomed at the IFHE Council meeting as a new 'A' Member. The Japanese Association becomes the 21st Association/Institution to join the Federation. Here is a brief description of HEAJ and its history.

HEAJ was established in 1953 with the aim to study, improve and disseminate the hospital facilities of Japan. The Association consists of the unique combination of the participating groups which cover the integrated range of parties involved in the hospital operation, including the hospital management, medical doctors, nurses, facility controllers, dieticians and other personnel working inside hospitals, academic people, hospital architects, hospital facility designers, installation operators, manufacturers of facility, apparatus and consumable items.

The Association is trying to solve current problems in hospitals by promoting the technical development of hospital facilities and creating the optimum environmental conditions for recovery of patient health and also working hard to improve the ambient conditions and form the pleasant working conditions for medical staff, nurses, engineers and other personnel.

During its 31 years of existence HEAJ has published a Directory of Hospital Engineering, carried out a study of standardisation of facilities and held its first Japan Hospital Engineering Conference in 1972. It now publishes a bimonthly periodical, runs an annual conference and exhibition. The address of HEAJ is: *Hospital Engineering Association of Japan, 113 1-30-16, Hongo, Bunkyo-ku, (Hongo Kasuga Mansion 403), Tel. 03-812-0257.*

9th International Congress

The Organising Committee of the 9th International Congress of the IFHE, to be held in Barcelona in May 1988, is at present preparing the first pre-programme. A call for papers will be sent to all members of the Associations of IFHE. It is hoped that there will be enthusiastic response.

Canadian Hospital Engineering Society 1985 Conference

It is with extreme pleasure that we wish to announce initial details of the 1985 Conference of the Canadian Hospital Engineering Society. This important international conference has adopted as its theme 'Engineering for Patient Care.' As you are probably aware, health care facilities are the most complex of buildings and as such as subject to rapid technological, change and innovative operating methodologies. The latter half of this decade will reflect these trends even more so.

As patient care is the prime objective and goal of every health care facility, it is imperative that the aforementioned changes fully reflect that fact. The conference will present new ideas with improved patient care as a basis for change. The beautiful city of Victoria, British Columbia, Canada, will host the Conference from July 22nd to 26th, 1985.

In order to ensure the conference is more than just successful, the Society needs your involvement and assistance. As the Society is a non-profit organisation, we would respectively request that this be done at no cost to the Society.

If you require further information please write to: *Secretary, Organising Committee, CHES Conference '85, PO Box 1773, Station 'E', Victoria, BC V8W 2Y3.*

Call for papers

The Canadian Hospital Engineering Society is convening the 5th National Conference in Victoria, British Columbia, Canada on July 22nd and 26th, 1985. The theme is:

'Engineering for Patient Care'

Technical papers reflecting this theme are being sought for presentation. Suggested topics could include facility planning, communications, quality assurance, engineered systems, biomedical devices, gas systems, facilities management, etc.

Please forward a brief 250 word extract before December 31st, 1984 to CHES-BC, PO Box 1773, Station E, Victoria BC V8W 2Y3, Canada.

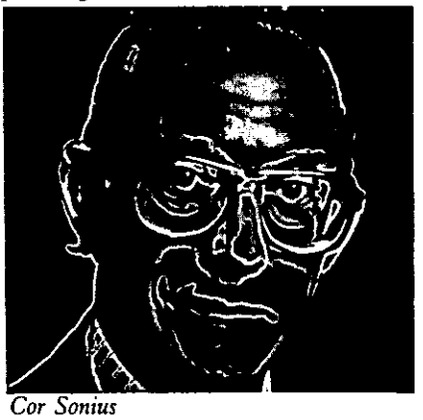
Basil Hermon

New General Secretary

Following the resignation of João Galvão, General Secretary after $4^1/_2$ years of devoted service to IFHE, the role has been taken over by Basil Hermon who was the Treasurer over the same period.

Basil Hermon worked in health service engineering for 28 years before he retired in September 1984. He joined the United Kingdom Institute of Hospital Engineering in 1957 and served on the Institute's Council for 17 years having been chairman of its Publications, Education and International Affairs Committees. He was a member of the small working party which met during the 1st International Congress in Rome in 1970 to develop the framework for the IFHE Statute which was later finalised and agreed in Paris during Easter 1971. He served on IFHE Council until 1976 then returned in 1980 to take over as Treasurer when Enrico Milone resigned.

The new role of General Secretary will include that of keeping the financial accounts in close cooperation with the Treasurer who will be responsible to the Executive Committee and the Council for developing and operating financial planning.



Cor Sonius

New Treasurer

At the IFHE Council meeting in Melbourne in November 1984 it was agreed to combine financial accounting with the role of General Secretary in order to reduce the time and cost of communication and created a new role for the Treasurer.

The Treasurer appointed by IFHE Council is Cor P. Sonius, the immediate Past President who was responsible for developing the new Statute and Standing Orders agreed by Council in Copenhagen in May 1983 which is now beginning to increase IFHE's income and therefore its potential to increase its activities.

This new role is essentially to advise on financial and investment policies, promote ways of increasing IFHE's income, seek sponsorships and monitor the income and expenditure to ensure that the Federation's finances are sound.

Busy retirement for Jan de Vries

Mr de Vries writes —

I herewith want to inform you that on the 1st of September '84, I have accepted my (early) retirement. This is in accordance with recently developed activities with the result of lowering the age of retirement for employees of health-care institutions. In the month of May this year I reached the age of 60. On the 4th of September a reception was held at the office of the Hospital Institute of the Netherlands (NZI) at Utrecht. I served the Institute during 15 years, nearly

since the foundations when the Institute started at 's Gravenhage.

A great number of colleagues and friends from all over the country came to Utrecht. We both, my wife and myself, keep the most gratifying memory to this special occurence in men's life.

Fortunately we are both in reasonably good health and therefore I intend to do some interesting avocations, also in the field of Hospital Engineering. So the available time will be filled up and the transition will not come about very suddently.

These activities for the future are:

☐ I still shall have some assistance to some projects. We started recently at the NZI (one day or more for the first year).

☐ I have just accepted a place in the editorial staff of the magazine 'Techniek in de gozendheidszorg' (engineering in Health Care).

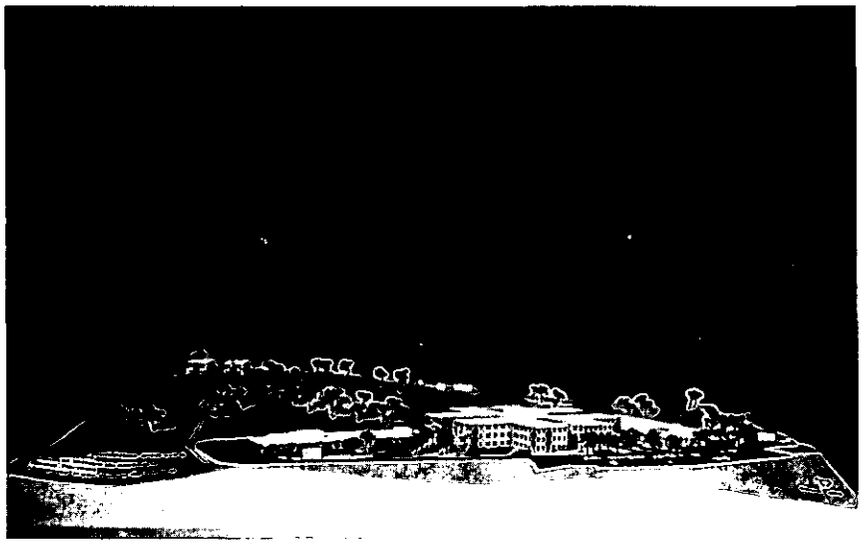
This magazine is also the official issue of the NVTG. (Dutch Association of Hospital Engineers).

☐ Last year I was accepted as a Council member at the formation of the: 'Association of Energy Consultants'. This association strives after recognition of this profession by means of the Composition of a consultant examination.

☐ Recently I have accepted the membership of the examining board of the training course for energy-coordinator.

For the near future I have been involved in the NVTG-Autumn-Meeting in presenting a lecture about 'Energy Situations in Relation to Hospitals'.

And last but not least at the IFHE-Congress at Melbourne, I have enjoyed meeting colleagues and friends form England.



Model of Mascara Hospital — Algeria.

Acknowledgement

The Editorial Board and the Publishers wish to acknowledge the assistance given by Mr Fred Green, the Editor of The Australian Hospital Engineer for his kind assistance in obtaining articles and photographs for the International issue.

India joins the IFHE

A the council meeting in Melbourne, the Indian Institute of Hospital Engineering became an 'A' Member of the IFHE. The Institute was formed in 1976 and has 60 members. The President is Engr V. P. Mehta. *Address: H O Department of Hospital Engineering, P G I Chandigarh — 160 012 India.*

Annual Conference and IHEX '85

The Annual Conference and IHEX '85 will be held at The Hotel Majestic, Harrogate on 22-24 May, 1985. Members of the National Federations will be warmly welcomed. It is hoped that many will attend.

New D Members

MEDICAL GAS INSTALLATIONS LTD

Operating internationally, the MGI Group supplies, installs, commissions and maintains piped medical gases and vacuum systems in hospitals, clinics and laboratories, designing and manufacturing the equipment themselves. MGI was established in 1974, on the foundation of in-depth knowledge of this highly specialised service to health care.

Separate companies within the MGI Group carry out each specialised integrated function, to ensure that standards and efficiencies are maintained.

The emphasis that Medical Gas Installations Limited place on quality and standards has established it as a widely approved contractor in this vital area of health care. Extensive experience has been gained from successfully carrying out installations for both the NHS and private health sectors in the UK and overseas.

MGI is currently involved in the *Mascara Hospital* project in Algeria, supplying, installing and commissioning the entire piped medical gases and vacuum systems in four new hospitals.

The location of the hospitals in the same earthquake zone as the devastated area of El Asnam, has created the need for special structural considerations. The hospitals are being built using a system that was originally developed to combat the destructive effects of mining subsidence, but which has since proved ideal for use in areas of high seismic activity.

The suppliers of the specialised services to these hospitals had to be capable, therefore, of incorporating the same safety factors into their systems. MGI were chosen to provide the medical gas services because of their position as one of the market leaders in this highly specialised area of health care, and because of their ability to solve specific application problems. Dedication to patient safety is evident by MGI's commitment to innovation, product excellence, professional ability and continually recognisable contributions to piped medical gas technology.

DOWSON & MASON LTD

Dowson and Mason Limited are a Private Limited Company, established in Manchester for over 80 years and specialising in the disposal of hospital waste by incineration. Four types of plant are offered, retort, controlled air, pathological burner, and fluidised bed.

For applications where an economic, simple manually operated plant for waste disposal only is required then the retort type equipment will be offered. In those areas where emission standards are stringent then a controlled air unit will be offered. Both retort and controlled air units can be automatically loaded, often using in the case of controlled air units Dowson and Mason built loaders. With controlled air units waste heat recovery can be offered using Dowson and Mason built or proprietary heat exchangers for water or air heating, or steam raising.

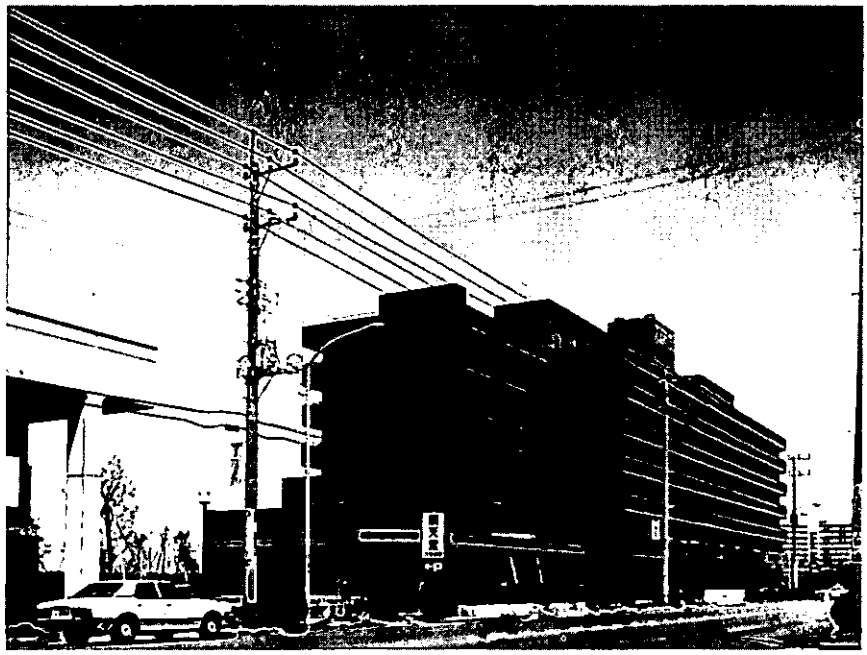
Where pathological waste only is to be disposed of Dowson and Mason offer a range of attractively packaged pathological incinerators. If a large centralised facility is contemplated disposing of large quantities of waste from several hospitals then a highly efficient compact fluidised bed unit would be offered invariably with heat recovery. For sophisticated control to minimise smoke and emissions and maximise heat recovery Dowson and Mason can offer its own microcomputer control.

Units have been supplied to hospitals in the UK, Scandinavia, Europe, Africa, and the Middle East. Literally hundreds of Dowson and Mason Incinerators are in operation throughout the world with often locally based agents and servicing facilities.

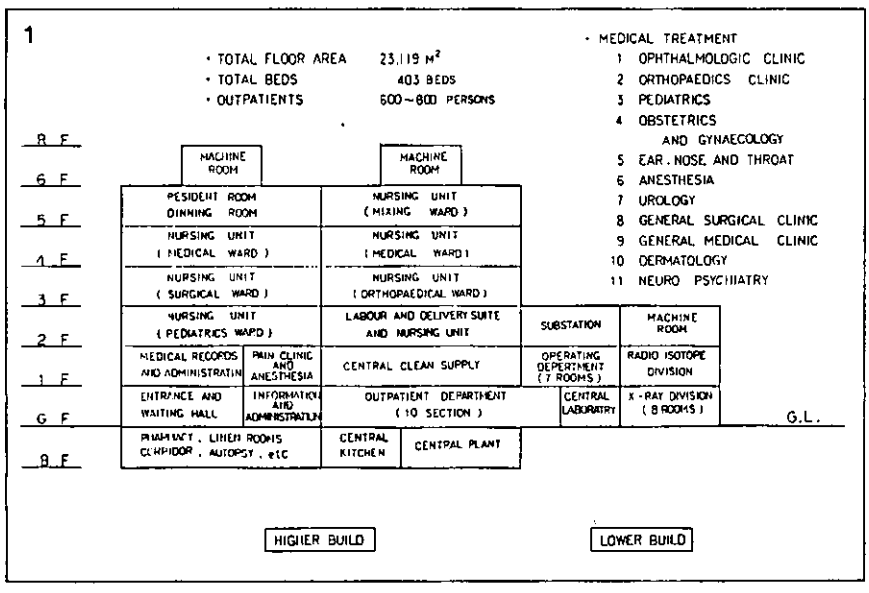
The author is a partner of P. T. Morimura & Associates, Consulting Engineers in Tokyo

A large scale hospital in the suburbs of Tokyo

PETER MORIMURA FIHospE



Exterior view of the Juntendo-Urayasu Hospital



SOMMAIRE FRANÇAISE

Grand hôpital dans la banlieue de Tokyo

Cet article décrit les principaux services techniques d'un nouvel hôpital construit dans une banlieue de Tokyo en 1983+84. L'auteur est un associé de P. T. Morimura & Associés — ingénieurs-conseils à Tokyo.

An outline of the hospital

Juntendo-Urayasu Hospital was planned as a local hospital in Urayasu City, situated approximately 12km east of the centre of Tokyo. The construction work was commenced in July 1983 and completed in March 1984.

An exterior view of the building is shown in Picture 1. The hospital consists of 11 clinic divisions and 403 beds as illustrated in Figure 1.

Air conditioning system

The air conditioning systems of Juntendo-Urayasu Hospital is designed, as a matter of course, throughout the whole building in order to secure the maximum function of the hospital.

The capacity of main cooling machines, etc is indicated below.

Absorption type chilled and hot water generator
cooling capacity 968,000kcal/h
heating capacity 839,000kcal/h — 2 sets

Packaged fire-tube steam boiler
capacity 2.4t/h — 2 sets

One-through type steam generator
capacity 1t/h — 1 set

Reciprocating refrigerator
cooling capacity 121,000kcal/h — 1 set

Air conditioning systems
Single duct systems — total 6 zones

3 zones for outpatient department
1 zone for medical record room
2 zones for high care rooms

Dual duct system
(operating rooms) — 1 zone

Fan coil units and single duct systems
(administration and wards) — total 10 zones

Air conditioning systems in operating rooms

There are seven operating rooms located at both sides of Clean Hall from which sterilized appliances are supplied to each operating room.

They are proven to be secured satisfactorily as Bio-Clean Rooms through the experiment under the conditions of near the actual use.

The air conditioning system is made of dual duct system. Air cleanliness in each Operating Room is indicated below by the standard of NASA.

Operating Rooms No. 1-3, 5-7; class 10,000 (diagonal flow system)

Operating Rooms No. 8 (Picture 2); class 100 (downflow system)

Outline of the whole system is illustrated in Figure 2.

Electrical installations

(1) The overall electrical installations were projected in accordance with IEC. Special attention was given to IED, TC62A (electrical installations in hospitals and in medically used rooms outside of hospitals) which covers the following.

2

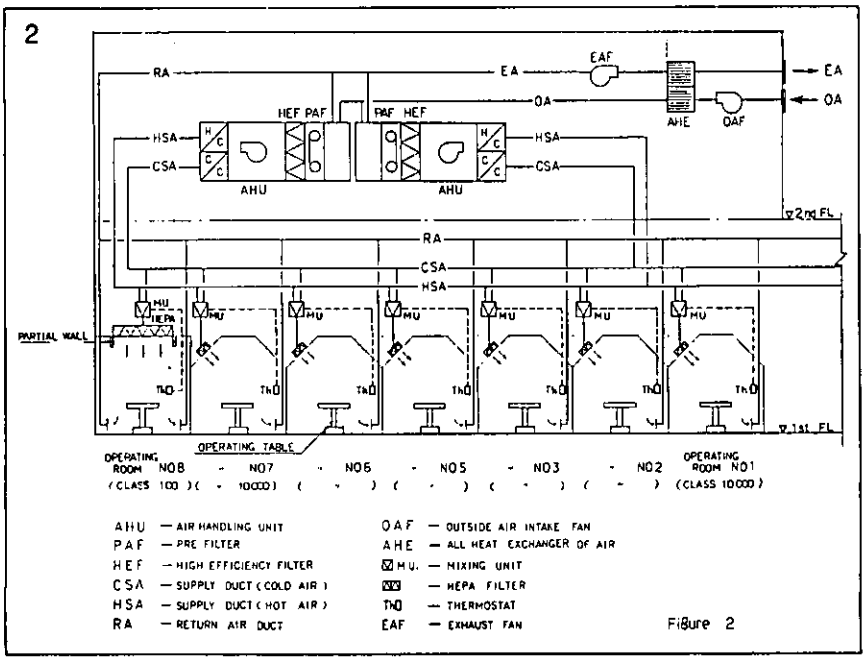


Figure 2

a. Protective earthing in medically used rooms
b. Equipotential connection and isolated supply system in operating rooms

(2) Measures to enhance reliability of supply in electrical power system

a. A distribution board for exclusive use of operating rooms and high care rooms (ICU, CCU) is made of double feeders so that electricity can be secured continually by the other feeder in case one feeder is unable to be used because of a maintenance check or an accident.
b. Power source to operating rooms can be secured by batteries for operations not to be interrupted in case utility power fails.

(3) Lighting

a. Lighting in bedrooms is set for patients to be able to switch on and off.
b. Lighting in corridors is installed only on one side instead of centre so that patients carried on stretchers do not feel glare of lighting.

(4) Communication Systems

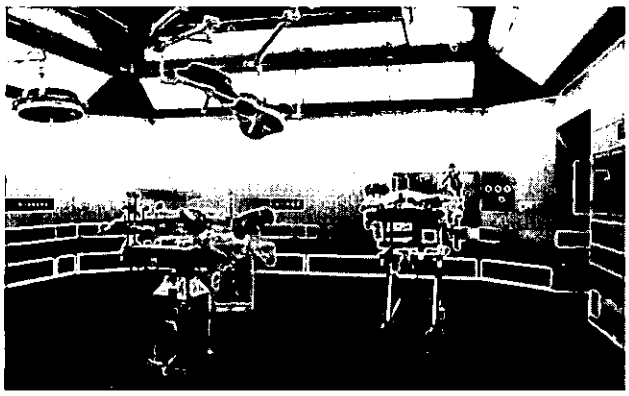
a. Nurse call interphones are set as one channel for one bed.
b. Emergency staff call buttons are installed in each receiver of nurse call interphones so that nurses can call for help of other staffs (doctors, nurses) in emergency case.
c. To upgrade the credibility of nurse call interphones, alarm systems are set in case an interphone at the bedside is suspended or displaced.
d. To smooth the communication of information in the hospital, connection among nurse call interphones, wireless paging and telephone systems is devised.

(5) Measures for the future

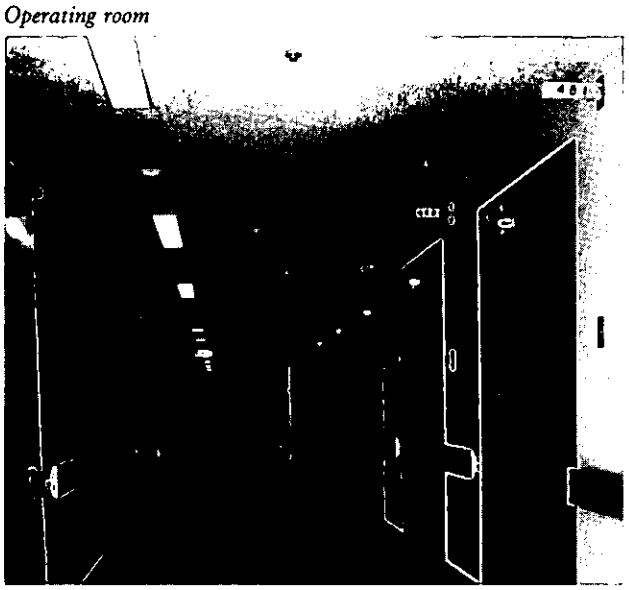
a. In order to meet renovation or additional installment of medical machines, allowance is reserved in electricity source by approximately 30%.
b. For additional supply of electricity a space is secured in vertical and horizontal direction.

(6) Volume of electrical installations

Transformer	6.6KV	3,375KVA
Emergency generator	6.6KV	625KVA
Uninterruptible power	100V	40KVA



Operating room



Off-centre lighting in a corridor

Product News

New fibre-optics liquid switches

A new range of fibre-optic switches for liquid level control has been developed in the UK by Delta Controls Limited. Because they have no moving parts and require no external power supply, the switches provide a convenient, safe and reliable method of controlling liquid levels even in hazardous areas, or for hazardous liquids.

Two versions are available to give fail-safe operation for either high or low level alarm or control applications. Both instruments consist of a probe in which optical fibres are used to guide light to and from a prism.

The switches will operate with virtually any clear liquid such as water, petrol, LPG and white oils. Probes can be manufactured to any reasonable length for top insertions into deep tanks.

Further details from Delta Controls Limited, Deltrol Works, Island Farm Avenue, East Molesey, Surrey KT8 0UZ. Tel: 01-941 5166.

Eschmann fixed services systems

The Eschmann Fixed Services System illustrated here demonstrates how in a modern operating theatre, equipment suitable for remote operation may be removed from the immediate operating area. The focal point of the system is the theatre panel (far right) which incorporates selected electrosurgical and suction systems. The power outputs for the wall-mounted equipment shown, are distributed close to the operating table via conduits to the overhead ceiling-mounted pendants.

Further details from Eschmann Equipment Division, Peter Road, Lancing, West Sussex BN15 8TJ. Tel: Lancing (0903) 761122. Telex 877075.

Buckingham Palace boilers

Four boilers have recently been supplied by Hoval to replace the 34 year old boilers previously installed at Buckingham Palace.

The first two boilers delivered were Hoval ST2000 hot water boilers with working pressures of 4.5 bar (65 lb.sq.in.). The other two boilers are Hoval ST5000 hot water boilers, each rated at 1466kW (5 million BTU/hr) with working pressures of 4.5 bar (65 lb.sq.in.). Each boiler uses a semi-reverse flame combustion system with three pass operation.

Further details from Hoval Farrar Limited, Northgate, Newark, Notts NG24 1JN. Telephone: (0636) 72711.

Safer lamp disposal

A new version of the Shatterbox automatic lamp disposal machine, with extra safety features and improved performance, has been introduced by Castell Safety International Ltd. This machine will rapidly and safely crush all sizes of used sodium, mercury and fluorescent lamps into small fragments.

Further details from: Castell Safety International Ltd., Kingsbury Road, London NW9 9UR. Tel: 01-200 1200. Telex 922871.

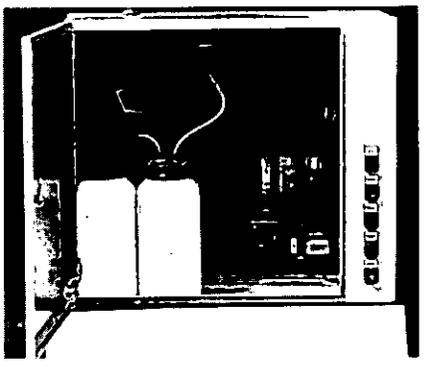
New BSS mini control valve catalogue

BSS, among the market leaders in the supply of equipment for the mechanical services and the process industries, have just produced a new catalogue for their range of UK manufacture mini control valves.

Copies of this catalogue (Ref 7:132) are available from BSS, Publicity Department, Fleet House, Lee Circle, Leicester LE1 3QQ. (0533-23232) Telex 342761 BSSG.

Automatic control of bacterial growth

Commercial and Industrial Boilers Ltd are now exclusive UK distributors of the Chemaire Microdoser System, an automatic device to control bacterial growth in ducted ventilation and air conditioning systems.



Chemaire Microdoser System comprising time control unit and liquid containers.

The unit simply installed in the ventilation system, automatically injects precisely measured doses of proven anti-microbiological agents into the airstream at predetermined times for selected periods, coating all internal surfaces of the air conditioning installation with a bacteriocide and inhibiting the growth of undesirable organisms. It also successfully treats those parts of the ducting inaccessible to normal maintenance.

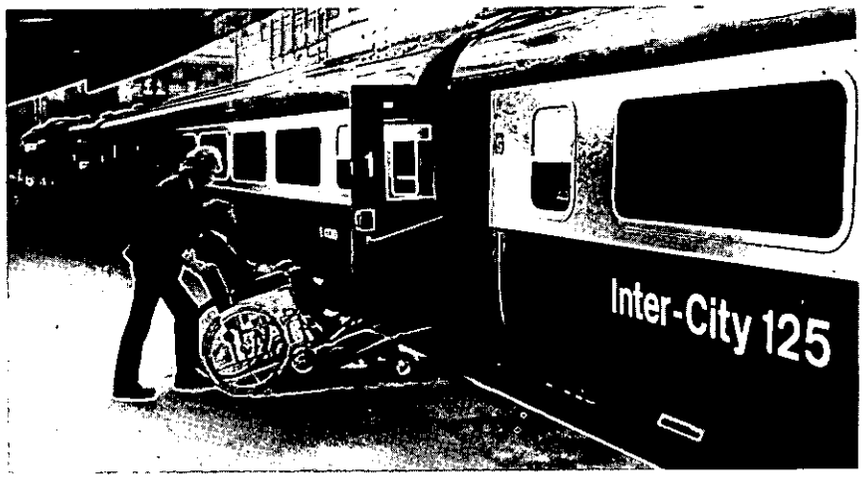
For further details contact: Commercial Industrial Boilers Ltd, 20a Jewry St, Winchester, Hants SO23 8RZ. Tel: (0962) 56176.

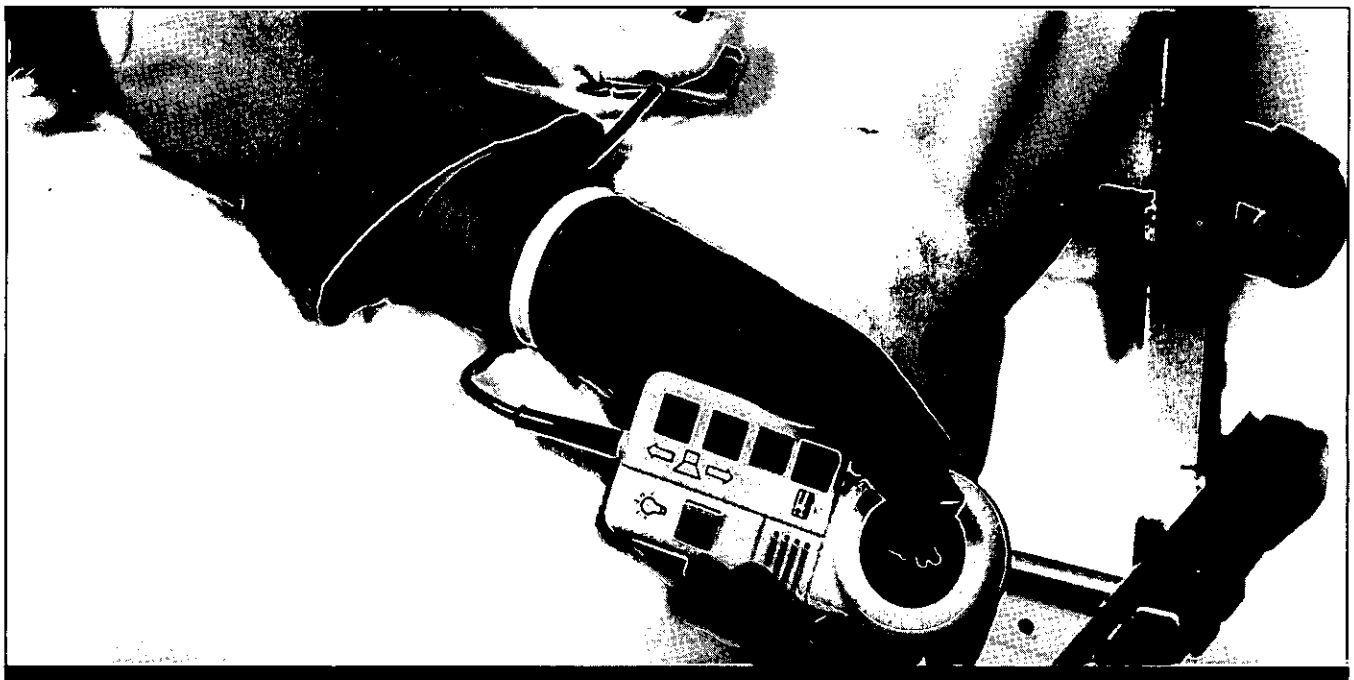
Ramp for British Rail

A ramp which will greatly facilitate rail travel for the disabled has been launched by A. & G. Walden Bros Ltd. The folding steel ramp, intended for use by wheelchairs and motorcycles, has been developed and designed by them in conjunction with British Rail.

Hailed as 'an answer to a prayer' by a BR spokesman, the ramp makes light work of bridging the gap from platform to railway carriage. Based on the sack barrow principle, the ramp can be easily wheeled around and may be transported on the train if required. It is simple to fix into position — the top half goes into the carriage and is firmly secured by two shoot bolts.

Further details from Walden's Trucks, 34 Wimbledon Avenue, Brandon Industrial Estate, Brandon, Suffolk IP27 0NZ. Telephone: 0842 811776.



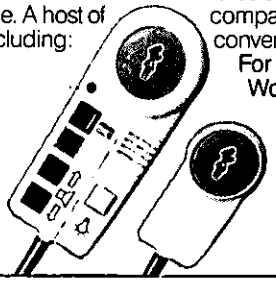


Nurse Call- help at hand

A breakthrough in patient handset design

The latest microcomputer technology has been used to develop a completely new design of patient handset which makes our nurse call system even more reliable. A host of additional benefits have been incorporated including:

- ☐ Simple to operate controls.
- ☐ Strong, lightweight case with comfortable rounded corners.
- ☐ Robust jack plug connector which easily (dis)engages from the wall unit to avoid damage.
- ☐ Convenient linen clip to keep the unit close at hand.
- ☐ Upgrade capability for existing systems.



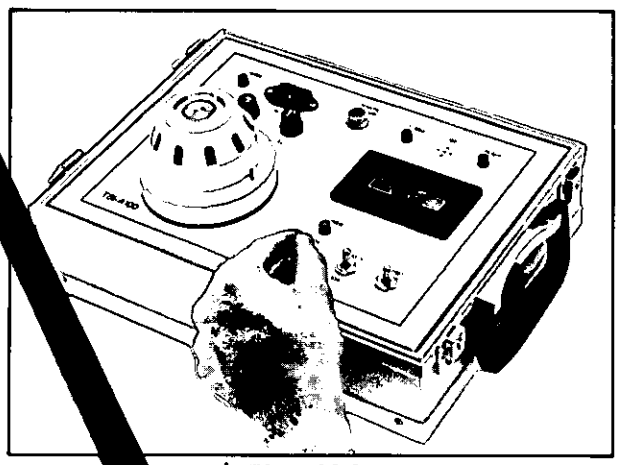
The associated wall unit has two compartments to keep the nurse call system separate from the mains voltage. Each compartment has its own cover plate for safe and convenient maintenance.

For more information please phone John Price on Wolverhampton (0902) 895551.

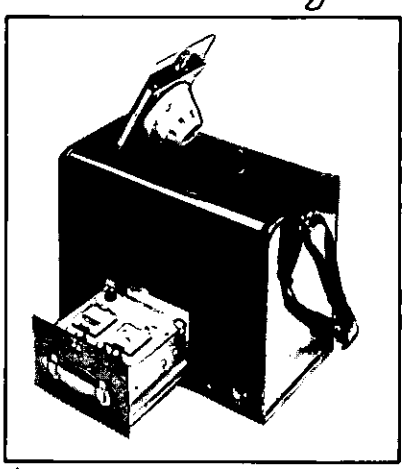
STATIC SYSTEMS GROUP

Static Systems Group, Heath Mill Road, Wombourne, Wolverhampton WV5 8AN

Maintenance made easy



▲ *TSI A100 Smoke Detector Test Meter*



▲ *TSA B220 Smoke Sensitivity Test Unit*

◀ *TSE A100 Smoke Pole*

TSI A100 SMOKE DETECTOR TEST METER

Gives service engineers the ability to quickly confirm that the electronic performance of the detector has not changed from original setting. Either ionisation or photoelectric detectors can be tested on this portable unit powered from rechargeable batteries.

TSA B220 SMOKE SENSITIVITY TEST UNIT

Specially designed for fast and efficient testing of smoke detectors and offering the advantage of compactness and portability for versatile use in the field. Compatible with most UK and European smoke detectors.

TSE A100 SMOKE POLE

This universal smoke detector test unit is the result of extensive research and development, aimed at making in situ testing a simple and time saving operation. Light weight telescopic construction for easy adjustment to ceiling height. Integral, simple-to-operate, controls and power supply, plus smoke generation.

Avoid expensive and annoying false alarms, often caused by inadequate testing and maintenance, by using the quick, simple and cost effective Hakuto range of maintenance and testing equipment. Hospitals, hotels, factories, laboratories and all other establishments, where smoke detectors form the first line of fire defence, will improve protection by reliable and regular maintenance. Hakuto equipment makes testing and maintenance of any smoke detectors a simple and time saving process, for both service engineers and in-house maintenance staff.

HAKUTO

EFSEC DIVISION

HAKUTO INTERNATIONAL (UK) LTD.
ELEANOR HOUSE
35 ELEANOR CROSS ROAD
WALTHAM CROSS
HERTFORDSHIRE EN8 7LF.
TEL: 01-367 4633 (2 LINES) LEA VALLEY (0992) 769090 (4 LINES)
TELEX: 299288 HAKUTO G

I am interested in your range of smoke detector maintenance equipment. Please send me further information.

NAME _____

ADDRESS _____

_____

_____

_____

Hakuto — the wisest choice

Our man in Melbourne, Basil Hermon, reports on the Congress and the IFHE meeting that were held during the Melbourne Congress.

IFHE 8th International Congress Melbourne, Australia

8th International Congress — 18-24th November

The 8th International Congress held at the Southern Cross Hotel in Melbourne, Australia, hosted by the Institute of Hospital Engineers (Australia) on behalf of the IFHE, proved a first class forum. For International exchange in Hospital Engineering and hospitality our hosts showed how friendly and generous Australians are towards visitors to their country.

Over 400 full delegates and more than a hundred social delegates attended from 23 countries. Many arrived on Sunday after long flights, suffering from jet-lag, which didn't prevent them from attending an excellent social gathering the same evening. This event set the social scene and gave everyone a taste of the hospitality to follow during the coming week and the friendships that developed.

Work commenced on Monday morning with the official opening made by the Federal Minister of Health the Hon Dr N Blewett M.P. after introductions by Robert Cottrill the President of IFHE and John Cherry the President of the Australian Institute. Dr Blewitt gave a brief description of the health services in Australia, emphasised the importance of hospital engineering in the care and treatment of patients and the value to all nations of international exchange of experience.

The ceremony was marred perhaps by the absence of Cor P Sonius, the immediate past President of IFHE, who had to cancel the trip at the last moment when regrettably his wife became ill — his address was read by Basil Hermon the new General Secretary of IFHE.

The IFHE has had a lot of support and help from the International Hospital Federation whose President Royce Kronborg — Manager of the Austin Hospital in Melbourne — gave the opening paper to explain the activities of the IFHE. It perhaps says something for the enthusiasm of Australians for the development of health services in other countries, especially the underdeveloped countries, when they have produced both Presidents of the two great Federations during the same period.

The technical programme throughout the week was conducted in two large conference rooms and the quality of the papers and the speakers was such that every session was extremely well supported. By using the parallel system delegates having a particular interest in a subject on one day were able to pursue that subject further the next day when more detailed papers and sometimes films were presented. The choice was wide — organisation and managerial planning and construction, environmental system (air quality and waste management) energy management, operation and maintenance, clinical engineering. The 65 papers were given by speakers from 13 countries, most of these papers are published in the Directory of Proceedings which can be obtained from the 8th Congress Secretarial IFHE, PO Box 302, Prahran, Victoria 3181, Australia price A $10 including postage by surface mail.

The opening ceremony of the Congress. Top picture shows Robert Cottrill President IFHE, welcoming the Federal Minister of Health Hon Dr N. Blewett MP, in the dart suit nearest the speaker.

On Monday evening the manufacturers who had contributed to the success of the Congress staged a well organised exhibition of their products giving delegates an opportunity to appreciate the whole range of modern plant and equipment available in Australia. One of the highlights of the social events was the dinner and musical evening hosted by the Institute of Hospital Engineers (Australia) in the Great Hall of the Victoria National Gallery with the Hon Tom Roper M.P., the Victoria State Minister of Health present.

Mr Roper spoke of the important role engineers have to play in securing the well-

being of nations. He emphasised the need for the wealthier countries to help the plight of those who were suffering in Ethiopia.

The National Gallery was built in the mid 1970's as the first phase of a total Arts Centre development which was completed in 1984 when the final buildings housing three auditoriums used for opera, ballet and music were opened. The Great Hall is covered by a stained glass ceiling which added to the colour of the event taking place below it.

Wednesday proved a break from the technical sessions when visits to a number of hospitals were organised and in the afternoon delegates visited the Healesville Wildlife Sanctuary and Badger's Creek followed by a barbeque in the evening which proved to be popular as it was one of the many outdoor events that the Australians are so good at organising.

The last of the technical sessions on Friday was followed by concluding remarks from Robert Cottrill and John Cherry. The reaction from the delegates said it all — the Congress had been an enormous success.

Many delegates had to leave Melbourne on Saturday to return home or to make short visits to other states of the vast and interesting country. Those who were able to stay enjoyed the rare opportunity to visit Phillip Island to watch up to 3000 Fairy Penguins at dusk waddle out of the sea to their burrows in the sand dunes, and to see Koala Bears in their natural habitat.

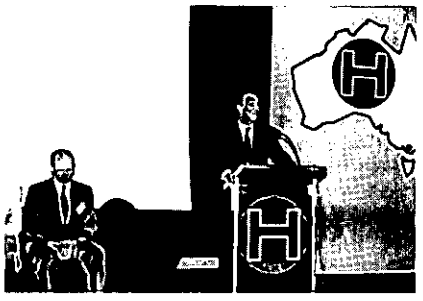
The climax of the social occasions, however, was the dinner and dance the previous evening at the 'Leonda By the Yarra' attended by about 400 people from all 23 countries. As delegates wished their new-found colleagues in hospital engineering goodbye they said "See you in Barcelona in May 1986".

IFHE meetings

The Executive Committee of IFHE met twice during the Congress in Melbourne 18-24 November to dispose of items of detail and prepare policy proposals and recommendations to Council.

The Council met on Sunday afternoon 18 November then again the following evening from 1800 hrs to 2245 hrs. There were 23 members present representing 17 'A' Member Associations/Institutions including Past President E Caetano and O Amato. Honorary Member B Massara and E Milone and Past President V Oviatt also attended.

In the absence of Cor Sonius who was unable to be present due to his wife's illness, the chair was taken by the Vice President Robert Cottrill whose first pleasant duty was to announce that the Hospital Engineering Institute of Japan had been elected as an 'A' Member by a majority of Council Members through a postal vote — he then introduced Mr Kenichi Matsumoto, the Vice President of the Institute. He also spoke of an application made to the Executive Committee on its previous day by the Indian Institute of Hospital Engineering. Professor Gupta was present to speak about the Institute and council duly elected India an 'A' Member.



The Hon Dr N Blewhett, Federal Minister of Health opening the Congress.

Consideration was given to a proposal that IFHE might help with some research to be undertaken in the USA into incineration and waste disposal. There was a need for someone to make a detailed study of the proposal and discuss it with the proposers in the USA. Mr S Morawski of Canada undertook to make this study on behalf of IFHE.

Council regretfully agreed to terminate the membership of Pakistan and Ghana as they had not paid fees for many years and officers were not receiving replies to correspondence. It was also agreed that in recognition of the valuable support given by the previous Associates they should be made 'B' Members on a special protected fee providing they pay their fees during the year in which they are due unless there is good reason why they are unable to pay.

Council agreed to a new fee structure for 'A' Members, which will be applied from 1 January 1985. This will ease the burden from the small Associations and require the large Associations to pay more. To make this system work it is important that 'A' Members keep the General Secretary informed of the numbers of members in their Associations.

Agreement was reached to terms of reference which changes the role of the Treasurer who will now handle financial policies, seek sponsorships, and control expenditure whilst leaving the accounting duties with the General Secretary. Council also agreed that in future the Treasurer may claim expenses to attend the Executive and Council Meetings.

Council was asked to indicate whether support would be given to a third Seminar on Appropriate Technology being run at Falfield, England in 1986. Whilst members agreed the need for such a seminar they were unable to guarantee that anyone from their country would attend as it would depend upon the willingness of their governments or health authorities to allocate the finance at the appropriate time. It was reluctantly agreed not to take the financial risk and therefore not to proceed with the seminar.

Robert J Cottrill of Australia was confirmed as the new President for the period up to May 1986 and Antonio Bonnin Vila of Spain was made Vice President. As Joao Galvao wished not to continue as General Secretary, Council elected Basil Hermon C.B.E. of the United Kingdom to the post and Cor Sonius of the Netherlands the Immediate Past President as Treasurer.

The Institute of Hospital Engineering (U.K.) was congratulated and thanked for their effort in publicising the IFHE which attracted manufacturers to apply for 'D' Membership. A similar publicity document has been produced in French and all 'A' Members were urged to follow the example of the United Kingdom.

The Vice President reported on progress on planning the 9th Congress to be held in Barcelona on 11th-16th May 1986. A pamphlet is now being sent out to invite applications from people wishing to present a paper.

It was agreed that in future, details of Membership shall be published for information of the IFHE members, permanent addresses of Associations, names of secretaries, the number of members and the fee payable by a member will be published as soon as the information can be gathered by the General Secretary.

Canada and the United Kingdom had both made a bid to organise the 10th Congress in 1988. Council decided to accept the invitation from Canada; therefore the congress will be held in Edmonton, Alberta — the Canadian Congress Committee has already begun planning.

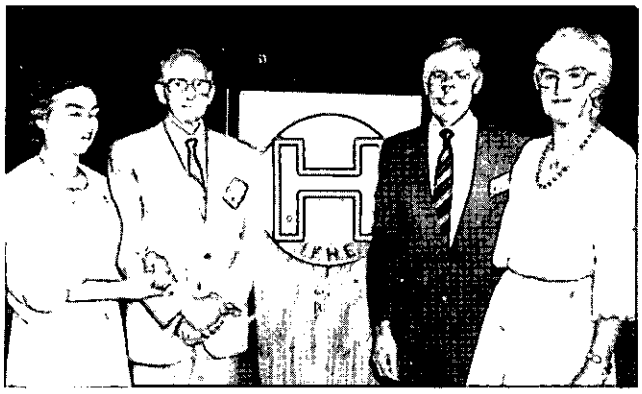
The General Assembly of IFHE Members took place on Thursday 22 November. It was attended by over 200 members. A report was presented on behalf of Cor Sonius and the Assembly expressed its appreciation of the valuable contribution he has made during the 2½ years as President. Appreciation was also expressed of the contribution in terms of time and finance made by Joao Galvao as General Secretary from 1980 and Vice Secretary before that. The past Treasurer presented the Statement of Accounts which is reproduced below.

FeNATO — Italy proposed an amendment to Article 6 of the Statute in accordance with Article 11 whereby 'E' Members would become members of Council without the right of vote. The General Secretary will be sending details to all Members and invite comments during the next 12 months.

Income and Expenditure Account 1.4.83-30.9.84

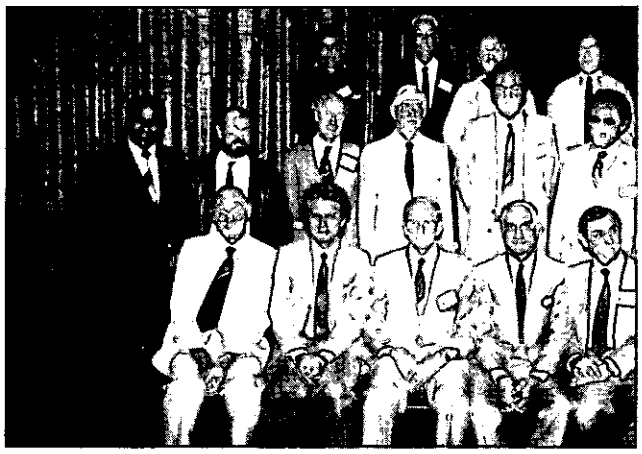
			£
Cash in Bank 31.3.83			8,710.73
Income			
Fees			
		£	
'A' Members	1983	595.59	
	1984	1,461.61	
'B' Members	1983	13.00	
	1984	88.00	
Subscriptions			
'D' Members	1983	50.00	
	1984	730.00	
Bank Interest	1983	516.23	
	1984	238.78	
			3,693.21
			12,403.94

Robert Cottrill and Mrs Cottrill (left) and Mr & Mrs Kronborg (right) at the Congress dinner dance on the Friday.



Official reception — Mr & Mrs Cottrill, Mr & Mrs Tom Roper, Victoria State, Minister of Health, Mr & Mrs Cherry, President IHE Australia, Mr & Mrs B. Noseda, Chairman Congress Organising Committee.

Also taken at the dinner dance, left to right, Mrs & Mrs B. Oyeboli Nigeria, Mr & Mrs Fred Green Australia, Mr & Mrs A van Krimpen Holland.



IFHE Council members. Left to right, back — B. Shapiro, B. Massara, A. Lena, A. Blackler. Centre — Dr R. Gupta, M. Triay, L. Turner, K. Murray, J. Wray, J. Davis. Front — B. Hermon, A. Bonnin, R. Cottrill (President), J. Galvao, O. Amato.

We publish an edited version of the address given by Royce Kronborg to the 8th World Congress of the IFHE on November 19th 1984

International Hospital Federation - its activities and aims

ROYCE KRONBORG
President of the International Federation (Australia)

The organisers of this 8th IFHE congress asked me to speak to you about the International Hospital Federation and this appealed to me because I believe the I.H.F. to be a unique organisation and one which could be emulated by others interested in improving the lot of mankind and in promoting world understanding.

It is unique for at least the following reasons:

it is a non-government organisation but is respected by governments world-wide;

it is totally apolitical and so can cross political barriers and comfortably embrace within its membership quite diverse ideologies;

although it was firmly founded on hospitals, it is now concerned with all aspects of health and health-care delivery, including the economic and social environment;

it is a truly international organisation wherein concerned people meet as equals, irrespective of their racial, religious, cultural or political back-grounds;

as a corollary of the foregoing, it includes in its membership a wide range of professional and lay groups who share a common concern for the people's health.

Perhaps I can best support my contentions about the I.H.F. by briefly reviewing its purpose, its history, its membership, its organisation, its activities and its sources of funds.

Purpose

The main aim of the I.H.F. can be summarised as being to promote improvements in the planning and management of the world's hospitals and health services through international conferences, study tours, training courses, information services, publications and research and development projects.

History

The origins of the I.H.F. lie in an organisation that was founded in the United States in 1929 with fairly limited membership (and vision) and which was disbanded at the outbreak of the second world war.

However, some seeds fell on fertile ground where they lay dormant until the late 1940's when a Belgian, Dr Réne Sand, initiated a move to establish what was to become the International Hospital Federation. He became the first President of the I.H.F. Dr Sand's efforts to raise the level of international health included work with both the league of Nations and the United Nations. This work in social medicine and international health was preceded by a varied career in biology, clinical medicine, neurology, industrial hygiene and occupational medicine. Réne Sand envisaged a world-wide organisation with a diverse membership and that is the way the I.H.F. was evolved. His work is commemorated in perpetuity by the selection of an outstanding person as the René Sand lecturer who presents the keynote address at the biennial world congress.

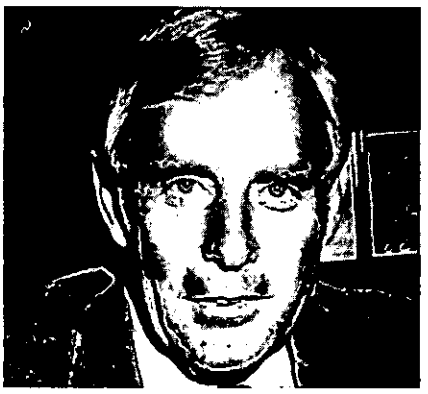
Membership

The membership of the I.H.F. is in five categories:

'A' membership is confined to national hospital and health service organisations — governmental or non-governmental — including national associations of public or private hospitals, Ministries of Health and other organisations concerned with hospital and health services at national level.

It is the 'A' members who hold the voting power in the I.H.F. with each country having six votes.

In some countries, the 'A' membership is shared — sometimes between associations — for example, the American Hospital Association and the Catholic Hospital Association; sometimes between the national association and the Department of Health — as it is in New Zealand. In these cases, the six votes are also shared.



Royce Kronborg

'B' membership embraces any other organisations, associations and institutions whose aims or activities are directly concerned with hospital and health services, including professional organisations, regional or local health authorities, groups of hospitals and individual hospitals.

'C' membership is for individuals from all disciplines and occupations concerned with hospitals and health services.

'D' is for professional firms — for example, architects and engineers — interested in hospital and health services, and commercial or industrial companies involved in the health care field, including publishers of journals.

'E' membership is reserved for honorary members who are elected by the General Assembly for special services rendered to the I.H.F. or to the health care field in general.

About 60 countries are represented in our 'A' membership at present and our 'B', 'C' and 'D' membership comes from nearly 100 countries.

Organisation

The combined membership forms the General Assembly of the Federation which meets every two years in conjunction with the world congress. This meeting receives a report of the activities and finances of the Federation for the previous two years.

The General Assembly elects the Council of Management, the President and President-Designate. Members of the Council are elected for a six-year term and one-third (six members) of the Council retire every two years, thus providing stability and continuity.

In the last 15 years, the membership of

SOMMAIRE FRANÇAIS

Allocution du président au 8e congrès mondial de l'IFHE

Royce Kronborg, MBE, président de la Fédération internationale des hôpitaux, a raconté au 8e congrès de l'IFHE comment l'IHF a été fondé en 1929, interrompu par la guerre et ressuscité à la fin des années 40. Son exposé explique les développements de l'IHF et ses nombreuses activités au cours des ans. Il s'agit d'une version abrégée de l'exposé en entier, publiée par le comité du congrès à Melbourne.

the council has broadened considerably to provide a more balanced viewpoint and, more importantly, so has the membership of the Executive Committee.

My election as President is also a significant step in the same direction because, until now, all presidents have come from Western Europe or the U.S.A. At the 24th World Congress in Puerto Rico in May next year, I will be succeeded by a Mexican.

After two years as President-Designate, the President serves for two years and a further two as Immediate Past President.

As the Council of Management meets only every two years, it is necessary to appoint an Executive Committee to conduct the affairs of the Federation in the interim.

The Executive Committee consists of the President, the Immediate Past President, the President-Designate, and four Vice Presidents, one of whom is the Treasurer. This Committee meets in London with the Director-General and senior staff every six months. Every member of the Council of Management has a standing invitation to attend (but not at I.H.F. cost) and to participate in the discussions (but not vote) and this invitation is widely taken up.

The day-to-day administration of the Federation is in the hands of a small team of professionals — including the Director-General, Assistant Director, Accountant, secretarial support and part-time interpreters. The staff totals ten full-time and four part-time people.

Activities

The major events in the I.H.F.'s calendar include the World Congress held every second year, a major study tour held in alternate years, supplemented by regional conferences and short study visits which are scheduled to meet perceived needs.

1 World congresses attract up to 2,000 participants and are held over five days. The program is designed around a multi-disciplinary, multi-cultural approach to meet the diversity of interests. Simultaneous translation is provided in English, French and Spanish. In recent years, congresses have been held in Lausanne, Sydney, Oslo, Tokyo and Zagreb.

2 Study tours cater for around 150 participants and run for 10-12 days. Each is devoted to a single country and involves extensive travel in that country so that an indepth understanding of its health services is obtained. Translation into the three official languages is provided. Recent study tours have been in Portugal, England, West Germany and Texas.

3 Regional conferences cater more specifically for regional needs but, apart from this, differ little from world congresses except that the participants are fewer — usually about 300 people. Recent regional conferences that come to mind are Buenos Aires, Manila, Seoul and Rio do Janeiro.

4 Short study visits usually home in on some specific aspect of a country's health care services — for example, primary care, district hospitals, computers and quality assurance. The participants usually number about 50 and the visit lasts about five days.

Probably the single most effective I.H.F. activity to date has been its sponsorship of the 10 week training course for senior hospital and health service administrators from overseas — in the main, from developing countries. This has been an annual event for 24 years and, in this time, over 600

Impressions and comments

Bob Cottrill of The Institute of Hospital Engineers (Australia) was appointed President for the next period of presidency. He writes here of his impressions, and comments on the 8th Melbourne Congress.

Robert Cottrill — new President, IFHE

The Cottrill family migrated from England around 1860 and settled in Melbourne, where it has remained. A schoolboy during the great depression of the 1930s, Bob has clear memories of those times, the rapid changes brought on by the second world war, and the comparative affluence which continued for forty years. In 1941 an engineering apprenticeship was seen as a good start, a road to security and many avenues for the future — this proved to be correct. During 1945, he enlisted in The Royal Australian Navy for a twelve year period, beginning as a 5th class Engine Room Artificer and moving through to Chief ERA for the final five years. He represented Navy many times at football and cricket. The day after leaving the service, Bob joined the staff of a State power station, as an operations engineer, where he remained for seven years. In 1964 he moved to Hospital engineering and began as Assistant Engineer at Prince Henry's Hospital. Four years later he was appointed Head of Department. Winding up seven years of night duty in 1969, which included a certificate of mechanical engineering, Bob became a member of The Institute of Hospital Engineers (Australia), a Councillor the following year, and President for three years from 1977. There is a strong recollection of the 6th IFHE Congress, held in the USA, when Mr Len Irwin and Bob put forward a successful submission for Australia to host the 8th Congress. The four years of investigating, planning and organising which followed, culminated last week in the actual event.

Impressions and comments

The Congress was a resounding success and as evidenced by the attendances from all parts of Australia and many countries, a major highlight in the thirty five year history of the Australian Institute.

The IFHE is to be congratulated for its bold 1980 decision to honour Australia, and should now in retrospect feel that it was justified. 'First time' attendances from Japan, India, Malaysia, Indonesia, Hong Kong, and Singapore, showed a keen interest in the objectives of the Federation and there was a strong contingent from New Zealand. The Hospital Engineering Association of Japan, and The Indian Institute of Hospital Engineering were admitted as 'A' Members and Indonesia has now applied for membership.

People at the Congress took full advantage of the many opportunities provided for social exchange — it was most pleasing to see the easy mixing which continued throughout the week — the establishment of new friendships and contacts, the renewal of old.

The hard core of European associations will of course continue to guide the Federation and see it expand into new areas. Perhaps its Councillors will be encouraged by the 8th Congress, and look forward, firstly to Barcelona in 1986 and then, to 1988 and the hosting by the young but strong and enthusiastic Canadian Society.

It is being planned to take extended periods of leave during my period as President. Primarily this will be done to spend time in Europe, to be in close contact with the other IFHE Officers, but additionally, efforts will be made to 'stopover' in other countries for promotional purposes.

health care administrators from 85 countries have received training in this program. As you can imagine, its ramifications have been profound.

The London office maintains an information service for members on hospital and health service matters anywhere in the world, and offers advice and assistance to members about personal study tours and other matters.

An activity by which the I.H.F. has encouraged its members to broaden their outlook is 'Good Practices in Mental Health' which was set up by the I.H.F. to stimulate interest in mental health — over 1,000 services have been included in their data bank as good practices and are available to enquirers throughout the world.

Other activities that have had the sponsorship of the I.H.F. Council of Management are documentation and information handling, which was dealt with in a forum in West Berlin in 1982 with seven countries participating, and legal liability and ethical issues confronting hospitals which have been similarly handled.

The I.H.F. is actively involved in promoting health care planning — the Sixth Annual Health Care Planning Workshop was held in Dublin, Ireland, in 1982 when 43 participants from 11 countries discussed the planning process and WHO Europe's regional strategy. Then, in 1983, another workshop on health care planning in urban areas was held in Lisbon, Portugal.

Another major thrust of the I.H.F. in recent times has been in relation to hospitals and primary health care. The World Health Organisation has long been critical of hospitals for taking too large a share of the health care cake, providing sophisticated services for the few, and paying too little attention to the prevention of illness and to the primary health care needs of the majority.

I believe this has come to be the case in Australia, too, but although the results are less than optimally desirable here, they are devastating in the poor and developing countries where about 800 million people live in abject deprivation.

None of the communicable diseases — malaria, tuberculosis, leprosy, river blindness, bilharzia, trachoma and sleeping sickness — is close to being defeated, and some are even worsening. Less than one-third of these people have safe water and adequate waste disposal, or anything like adequate housing — particularly in the urban areas.

In circumstances such as these you can imagine just how much the provision of a sophisticated hospital drains scarce resources from basic progams of public health, education and prevention, and primary care.

If governments worldwide were truly interested in the long-term, they would be ploughing money into health education, preventive health programs and rehabilitation, and also into the environment and the general socio-economic setting.

The I.H.F. has worked assiduously, and very successfully, to encourage hospitals to break out from the confines of their brick walls and to become involved in outreach activities in their communities, including health promotion and illhealth prevention.

The I.H.F. is collaborating with WHO in the rapidly expanding problem of health care in big cities — I say rapidly expanding advisedly because WHO's projections are really quite staggering ... in 1900, London was the only city in the world with a population of more than 5 million ... by the year 2,000, there will be sixty, 47 of these in the developing world. Mexico City could then be the biggest city in the world with a population of 32 million — Manila, from a mere 5.6 million in 1980, could have 13 million — and, closer to home, Jakarta will increase from 7 to 17 million. You can imagine the problems that increases of this magnitude will pose for governments, health care providers, and the people themselves in those cities.

To help find solutions for these problems of the future, the I.H.F. has been involved in inter-city workshops ... Washington and Manila are two examples. A large grant by the W.K. Kellogg Foundation has enabled us to select travelling Fellows to study and report on the problems in particular cities — four in Latin America and two in Europe.

The Federation has also highlighted the need for solutions to problems of health care in big cities by including the topic in recent and future congresses, and by special study visits in Mexico City, Buenos Aires, Shanghai, Beijing and another in Seoul in April of this year.

The I.H.F. will maintain and develop its interests in these activities in the future, but it will also devote more attention to such things as cost containment, methods of financing health care, care of the elderly, appropriate technology for hospitals and health care, implications of advanced technology and long-term strategies for health and welfare.

Publications

The I.H.F. publishes 'World Hospitals' as a quarterly journal which is issued free to members. It is printed in English with a supplement in French and Spanish, and contains authoritative articles and reports on various aspects of international developments in the planning and operation of hospitals and health services. Particular attention is paid to reporting on I.H.F. congresses, study tours and other activities.

A recent innovation has been the publication, under the aegis of the I.H.F., of a Yearbook. The first issue has been a resounding success and we hope it will go from strength to strength for, whilst there is no financial return, we are getting, at no cost, extra publicity and additional space to publish contributions from around the world.

We also publish, from time to time, books likely to be of particular interest to our membership and these help in further publicise the work and the interest of the Federation.

Finances

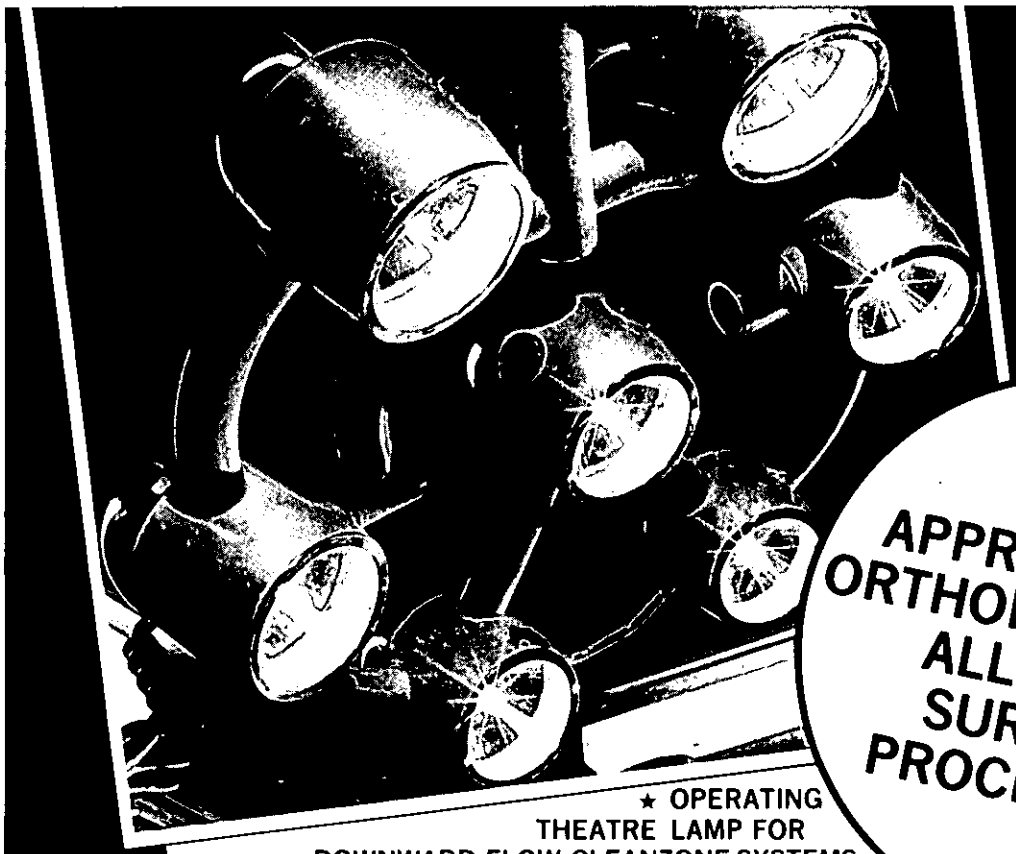
Until comparatively recent times, the I.H.F. relied largely on its subscription income, but worldwide inflation, coupled with worldwide economic stagnation, brought us great difficulties and caused us to rethink the situation.

As a result, we now recognise that if we are to thrive and develop, a significant proportion of our nett income must come from activities run under the I.H.F. banner. The world congresses are now a major source of such funds and the surplus is invariably directly related to the additional premium paid in the registration fee by non-members.

Nevertheless, when registration fees are being determined, one has to be ever conscious of the need not to set a price that would put it beyond the reach of those we wish very much to participate.

A number of organisations provide financial support too. The 3M company underwrites all of the costs associated with the Rene Sand Memorial Lecture; the U.K. Department of Health and Social Security supports the program of 'Good Practices in Mental Health'; the King's Fund in London and the Hospital Research and Educational Trust of the American Hospital Association have both provided seeding money at critical times in the past. I've already mentioned the Kellogg Foundation and their generous funding for fellowships in relation to 'Primary Care' and 'Health Care in Big Cities' and, last year, the Japan Hospital Association raised 26,000 pounds sterling from industry to establish a fund to provide fellowships to study problems in the Asian and Pacific regions.

Currently, the Federation's finances are sound and I hope they will long remain so.



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General Secretary of IFHE since 1980 Joao Galvao resigned at the Council meeting in Melbourne on November '84. Here we review his distinguished contribution to IFHE over the last four years.

João Galvão

Joao Galvao, past General Secretary, IFHE reporting to the General Assembly held in Melbourne on 22 November 1984.

With his degrees in Mining Engineering and Civil Engineering by the University of Lisbon, Joao Galvao started his professional career in the oil industry with the Shell-Royal Dutch Group of Companies. That led him to post-graduate courses in the United Kingdom and, having lived extensively abroad, he has been connected with the international engineering world ever since.

A member of the Portuguese Association of Hospital Engineering (APEH) since 1972, he was a member of the Organising Committee of the Fifth International Congress of Hospital Engineering, held in Lisbon in 1978, and of IFHE's Council Meeting held on the same occasion.

Upon his nomination by President Vinson Oviatt, Joao Galvao was elected General Secretary at the Meeting of the Council of IFHE in Washington, in 1980.

Appointed Vice-Secretary at the Council Meeting in Amsterdam, he had been assisting General-Secretary Bruno Massara and had worked with President Eduardo Caetano during his term of office.

In Portugal he has been a member of the Organising Committee of the First National Congress of Hospital Engineering, Architecture and Equipment, held in Oporto in 1981, and has been frequently involved in the activities of APEH.

Abroad he has participated in hospital engineering events in a number of European countries as he feels his active presence emphasises the appreciation and support of the Federation to the activities of all Members, particularly when the exchange of knowledge in problems and experiences, organised by a national Association takes an international character through the participation of members of other Associations, or had a special significance for IFHE, such as the Seminars on Appropriate Technology conducted for IFHE in England by the splendid team of Falfield with a success he has been most pleased to witness.

Under the leadership of the President and with the invaluable assistance of the other Officers, particularly of the Treasurer, Mr Basil Hermon, J. Galvao has studied new steps and activities to propose to the Council, in order to approach the attainment of the goals aimed by the Federation.

In this sense may perhaps be mentioned the role he has played in originating the study, the drafting and the discussion of the amendments to the Statute and the Standing Orders, submitted to the perusal and suggestions of all Council members, prepared in the Executive Committee and discussed, changed and finally approved by Council, the governing body of the IFHE.

This continued action resulted in an almost complete change in the structure of the Federation, expressed in practically new Rules with a view to promoting an expansion of the activities that Galvao deems required by the objectives of the Federation.

The increase in the financial resources that the present structure of IFHE should hopefully provide — with the needed collaboration of all Members — shall give the new General Secretary, and Council, much wider possibilities of action.

The varied activities of this International Federation tend mainly to foster and develop the exchanges of information between the members, concerning their difficulties and problems, the trials and errors in the way of the proposed solutions — to be appropriately adapted to the varied and changing circumstances of the widely different Associations and members.

But, besides the lack of sufficient material resources and the inertia of many mechanisms, mainly bureaucratic, outside IFHE, one of the hindrances to the successful work of the General Secretary in promoting the exchanges of knowledge and experiences between IFHE's members, is that for a personal contribution *in writing* from the members, in many instances the time is lacking on the part of most professionals assembled by the Federation, as they have no spare time to devote to IFHE after their daily professional responsibilities and tasks.

The General Secretary should be — he must be — a promoter of activities, pushing at the wheels, to win over inertia. His experience of these four years is that in many instances, he must push a lot, expect a lot, despair nothing at all — to move a little. But he is fully confident in the acceleration of the movement from now on. So, when leaving his term as General Secretary, Joao Galvao would rather point to the projects for the immediate and long-term future than to review what has been achieved during this period of transition in the structure of IFHE.

The 'international' character of the International Issues of the 'Hospital Engineering' is clearly more marked at present. But we should go further in this direction and might even consider the possibility of inserting in our Journal 'separates' of summaries or full texts of articles or news written in French and in other Latin languages, particularly Spanish. This is important to help promote the attainment of another fundamental goal: to foster the foundation of new national hospital engineering societies, to be brought into the Federation, amid the less-industralised countries of Latin-America, Africa and Asia that are not yet represented in IFHE.

To promote this project, Joao Galvao would have liked to organise an International Seminar on Appropriate Technologies at Falfield, to be sponsored through IFHE and participated also by technicians from countries still devoid of hospital engineering associations and which presently experience great difficulties or total incapacity to spend foreign currency abroad for participants in a most useful but far-away and necessarily costly Seminar.

The most ambitious long term project of Galvao would be to:

a) bring into IFHE a vast number of hospital engineering technicians from many countries not yet represented in it.
b) start initiatives and take action that make the technicians and members of IFHE in all classes of membership to actually *feel* that they *receive real advantages* from being associated with all other Members of the Federation.

As most industralised countries of Western Europe and North America are, together with Australia and New Zealand, already 'A' Members of IFHE, the first step might be to promote the foundation

of national Associations of hospital engineering in developing and industrially-emerging countries where the technicians of this particular field of engineering are isolated and, in Joao Galvao's view, would have much to gain from being members of this Federation.

He has not had the opportunity to start this move, as well as other long-term projects, but his successor may, together with the Council, pursue these or other objectives that may seem to him more adequate to IFHE as a whole.

EN FRANÇAIS

JOÃ GALVÃO

Ingénieur de mines et ingénieur civil par l'Université de Lisbonne, João Galvão a commencé sa carrière professionnelle dans l'industrie du pétrole, avec le Groupe de Compagnies Shell-Dutch Royal. Cela l'a amené à des cours de post-formation dans le Royaume-Uni et il a été lié au monde de l'ingénierie internationale depuis lors, ayant vécu une grande partie de sa vie à l'étranger.

Membre de l'Association Portugaise d'Ingénierie Hospitalière (A.P.E.H.) dès 1972, il a été membre du Comité d'Organisation du Ve Congrès International d'Ingénierie Hospitalière, tenu à Lisbonne en 1978, et de la Réunion du Conseil de la FIIH y associée.

A la suite de sa désignation par le Président Vinson Oviatt, João Galvão a été élu Secrétaire-Général lors de la Réunion du Conseil de la FIIH à Washington, en 1980.

Il avait été nommé Vice-Secrétaire à la Réunion du Conseil à Amsterdam et avait assisté depuis lors le Secrétaire-Général Bruno Massar. Il avait travaillé aussi auprès du Président Eduardo Caetano pendant le mandat de celui-ci.

Au Portugal il a été membre du Comité d'Organisation du Premier Congrès National d'Ingènierie, Architecture et Equipements Hospitaliers, tenu au Porto en 1981 et a pris part à d'autres réalisations de l'APEH.

À l'étranger, il a participé à de nombreuses activités des Associations de plusieurs pays car il estime que sa présence souligne l'appréciation et l'appui de la Fédération aux actions entreprises par tous ses Membres, particulièrement lorsque les échanges de connaissances concernant les problèmes communs et les expériences des solutions proposées, bien qu'organisées par une Association nationale prenait un caractère international du fait de la participation active de membres de la FIIH ou d'autres Associations nationales, ou présentaient un intérêt particulier pour la Fédération, comme dans les cas des 'Séminaires sur la Technologie Appropriée' conduits en Angleterre par l'excellente èquipe de Falfield avec un succès dont le Secrètaire-Général a ètè heureux d'être le tèmoin.

Sous la direction du Prèsident et avec l'inestimable collaboration des autres 'Officers' et particulièrement du Trésorier, M. Basil Hermon, M. Galvão a ètudié et proposé de nouvelles mesures et activités en vue d'approcher davantage les objectifs que se propose la Fédération.

Dans cette perspective peut être mentionné le rôle qu'il a joué comme promoteur de l'étude, de la rédaction des projets et du large débat des amendements proposés aux Status et Règlements Généraux de la FIIH, soumis à l'examen, aux critiques et suggestions de tous les membres du Conseil, préparés dans le Comité Exécutif nouvellement créé, et discutés, améliorés et finallement approuvés par le Conseil, l'organe directeur de la Fédération.

Cette action persistante a amené une évolution très importante de la structure de la Fédération, traduite dans des Statuts et Règlements pratiquement nouveaux, dans le dessein de créer les conditions pour une expansion des activités que M. Galvão estime exigée par les objectifs de la FIIH.

L'accroissement des ressources financières que l'on est en droit d'attendre de la prèsente structure de la FIIH — si tous les Membres 'A' donnent leur collaboration soutenue, parce que indispensable — pourvoira le nouveau Secrétaire Général, et le Conseil, de moyens d'action beaucoup plus importants.

Les activités de cette Fédération Internationale tendent dans leur ensemble à susciter et développer les échanges d'information entre ses membres, concernant leurs problèmes spécifiques et leurs expériences et succès dans le développement des solutions propoées pour leurs difficultés, en tenant compte de la nécessaire adaptation aux conditions, diverses et changeantes de très différentes Associations et membres.

Outre l'insuffisance des moyens matériels et l'inertie de nombreuses structures bureaucratiques — extérieures à la FIIH — un des principaux obstacles au succés du travail du Secrétaire-Général provient finalement du manque généralisé de *temps* dont souffre la plupart des professionnels groupés dans la Fédération, car il ne leur reste pas beaucoup de temps libre à consacrer aux actions de la Fédération après les heures de travail et responsabilité exigées par un absorbant quotidien. Cela est particulièrement vrai pendant le 'temps mort' de deux années entre deux Congrès Internationaux.

Le Secrétaire Général doit être — il faut qu'il soit — un promoteur d'initiatives, poussant de son èpaule à la roue pourtâcher de vaincre les inerties naturelles. Son expérience de quatre ans à son poste lui a appris qu'il faut pousser beaucoup, espérer beaucoup, ne désespérer ni un brin — pour avencer un peu. Par contre, il est très sûr de l'accelération du mouvement à partir de maintenant si chaque Membre y met du sien à l'appui de son successeur.

Ainsi, au terme de son mandat comme Secrétaire-Général, M. Galvão voudrait laisser un message d'espoir, en désignant des projets pour l'avenir, immédiat et à plus long terme, plutôt qu'en passant en revue ce que l'on a pu faire pendant la difficile période de transition de la FIIH.

Le caractère 'international' des 'International Issues' de la 'Hospital Engineering', la Revue officielle de la Fédération, est nettement plus marqué depuis quelque temps par l'insertion de beaucoup de résumés en français.

Mais M. Galvão estime qu'il faut aller plus loin dans cette direction et l'on pourrait même envisager la possibilité d'insérer dans la Revue (avec la collaboration indispensable des Associations de pays de langue latine) des feuillets, de production moins chère, contenant le texte intégral ou des résumés plus importants des articles techniques et des nouvelles, rédigés en française et/ou en une autre langue latine, notamment l'espagnol.

Ceci serait très important pour aider à atteindre un autre objectif fondamental: promouvoir la fondation de nouvelles Associations nationales d'ingénierie hospitalière dans les pays en développement en Amérique latine, en Afrique et en Asie qui ne sont pas encore représentés dans la FIIH. (En Amérique latine dix-neuf pays parlent l'espagnol). Entretemps, y admettre des membres dans d'autres catégories.

Dans le cadre de ce project M. Galvão aurait aimé promouvoir l'organisation d'un 'Séminaire International sur la Technologie Appropriéé, semblable à ceux déjà réalisés pour la FIIH, avec beaucoup de succès, en Angleterre (Falfield). Celui-ci devrait recevoir un appui financier extérieur à travers la Fédération pour que puissent y participer des techniciens de pays qui n'ont pas encore d'association nationale d'ingénierie hospitalère et, en plus, ont de très grosses difficultés en matière de disponibilité de monnaie étrangère pour payer les dépenses de la participation à l'étranger, à un Séminaire très utile mais nécessairement onéreux, dans un pays lointain.

Ainsi, le plus ambiteux projet à long terme de M. Galvão aurait été de:

a) Amener dans la FIIH un grand nombre de techniciens d'ingénierie hospitalière provenant de pays pas encore représentés.

b) Lancer ou intensifier des action qui fassent les techniciens membres de la FIIH dans toutes les catégories *sentir de façon 'palpable'* qu'ils reçoivent de réels avantages du fait d'être associés à tous les autres membres de l'Association. Ceci est indispensable si l'on veut voir se multiplier les adhésions à la FIIH, la circulation et diffusion du 'Journal' etc.

La plupart des nations industrialisées d'Europe occidentale et d'Amérique du Nord, ainsi que l'Afrique du Sud, l'Australie, la Nouvelle Zélande et, maintenant, le Japon, ont déjà leurs Membres 'A' dans la Fédération.

Un pas suivant pourrait être de stimuler la création d'Associations nationales dans les pays en voie d'industrialisation, plus ou moins accélérée, où les techniciens de cette branche particulière de l'ingénierie sont isolés et, estime M. Galvão, auraient beaucoup à gagner en devenant membres de notre Fédération.

M. Galvão n'a pas eu la possibilité d'aider à vraiment démarrer ce mouvement, ainsi que d'autres projets à moyen et long terme, mais son successeur pourra, mieux que lui, tâcher d'atteindre ces objectifs, ou d'autres qui lui paraîtront plus adéquats.

The author was Project Officer for the clinical engineering programme in New Brunswick. He works in the Bio-Engineering Institute, at the University of New Brunswick, Canada.

Considerations in implementing shared clinical engineering services in New Brunswick

P E PAASCHE P Eng CCE

The Setting

New Brunswick is one of Canada's smaller provinces, with a population of about 700,000 dispersed unevenly but sparsely over an area of 7,000,000 hectares. There are 32 public general hospitals scattered among cities, towns and villages in a manner more determined by economic and cultural history than by present needs. From the provincial capital, Fredericton, driving by automobile to the most distant hospital in any direction exceeds three hours. Figure 1 illustrates this situation.

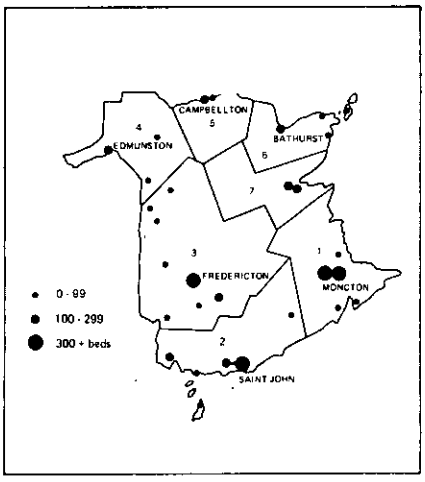


Figure 1. New Brunswick Hospitals — geographic distribution

While the majority of New Brunswick residents have English as their mother tongue, the province is officially bilingual (English and French), more than one-third of the population is Francophone, and French is the working language of 10 of the 33 hospitals.

Most hospitals are small, around 90-150 beds as shown in Table 1. There is only one hospital presently over 500 beds, the Saint John Regional Hospital. Each hospital's budget is generally subject to provincial government approval. The total operating budget for these hospitals in 1982 was approximately $300,000,000.

The concept

Discussion was first initiated in 1969 between the Bio-Engineering Institute and the Department of Health for New Brunswick concerning the need for a clinical engineering program in New Brunswick hospitals. The three larger hospitals had within their maintenance departments, electronic technicians who could to some extent take care of electronic equipment in operating rooms and some special care areas. Otherwise there was no organised maintenance of electromedical equipment. Repair was a hit-or-miss business depending upon suppliers' service representatives, most of whom were located outside of the province.

Table 1 — New Brunswick hospitals — size distribution

Number of beds	Number of Hospitals
0-24	5
25-49	7
50-99	9
100-199	6
200-299	2
300-499	3
500+	1

In November 1972, when a formal agreement was signed for development of a clinical engineering program, concensus had been reached upon some aspects of this service. Key elements in the discussion were as follows:

a.) the program must be made accessible to all hospitals;

b.) while repair and maintenance are obvious requirements of a clinical engineering program, such services as education and consultation concerning facilities development and equipment acquisition may be of even greater value, and must be provided;

c.) the program must be cost-effective, and even so must be developed gradually.

With these three concepts as a starting point, and with the obvious fact in mind that most of the hospitals in New Brunswick were too small to justify each having its own clinical engineering department, it was agreed that some form of shared services was necessary.

As seen in Figure 1, the province is divided into seven districts for the purpose of health care administration. It seemed reasonable to arrange the new clinical engineering service along these same district boundaries.

One other decision concerning the organisation of this regional clinical engineering service was important. Two possibilities were considered — to have a provincial service with satellite departments in regional centres, or to establish autonomous regional clinical engineering departments with some central coordination but no control. The latter system was adopted for two reasons. First, it provides greater local satisfaction and reduces the paperwork. Secondly, it places the engineers in a somewhat closer daily contact with hospital personnel, both medical and administrative.

SOMMAIRE FRANÇAIS

Réflexions sur la mise en oeuvre de services techniques médicaux communs dans le Nouveau-Brunswick

Cet article décrit la façon dont est assurée, sur une base régionale, l'entretien d'un service technique médical, permettant d'utiliser avec le maximum d'efficacité la main-d'oeuvre professionelle et les équipements spécialisés.

The planning phase

The first objective in implementing this program was to determine existing conditions and to set priorities for resolution of the most serious problems. Surveys were conducted in all hospitals for basically three things: the condition of the critical services within patient care areas, establishment of an inventory list of patient care equipment and the condition of the most critical equipment. At this stage considerable effort was directed toward the various hospital administrators in order to obtain their views as to what they might expect from a clinical engineering service. The plan for a provincial service had now begun to take shape and it had become evident that the service would have to be rather adaptive to rapidly changing needs. Basically five priorities for such a program had by now been established, and are still felt to be valid. In order of decreasing priority they are:

a.) consultation in the selection, installation and use of patient care equipment,

b.) development and implementation of

safety assurance programs,

c.) development and implementation of equipment control programs, including incoming inspection, maintenance and repair,

d.) collaboration in developing regional, national and international standards in clinical engineering,

e.) development of equipment or techniques to meet special local requirements.

We did not list education as a separate priority, not because it is less important but rather it is considered to pervade all of the activities above. There was, and remains, a strange feeling that the educational role of a clinical engineering department is accomplished most effectively when education is *not* regarded as a separate activity. [1, 2, 3, 4]

While these matters were attended to, an initial service was provided centrally for verifying corrections of the most serious defects in the electrical services and the performance of some maintenance and repair of electromedical equipment. As well, a centre consultations service was initiated to hospitals, to government and to designers of health care facilities. The repair and maintenance service throughout the province was provided by using a van equipped with test facilities and a stock of repair parts. As perhaps can be envisaged from Figure 1, the problems of New Brunswick's sparse distribution of population were highlighted. The ratio of travel time to on-site working time was particularly high.

As an ongoing step is the establishment and staffing of the four regional clinical engineering departments. Initially it was considered appropriate to provide each department with one engineer and one technologist, with expansion to be determined by demand for services.

Regional clinical engineering programs

It would be inappropriate to provide specific data of the development of these programs, some aspects of which might be considered to be confidential or at least sensitive.

However, it does seem advisable to summarise these matters, because the experience gained on this project may have relevance elsewhere.

In retrospect it has become very evident that agreements concerning any form of shared service involving more than one institution must be formal, in writing and of course signed by all parties involved. Many of the problems encountered in the early development of regional programs in New Brunswick can in part be attributed to lack for formal agreements. This is particularly inadequate when one introduces a new concept which is relatively poorly understood as was the case with clinical engineering in New Brunswick in the early 70's.

The manner in which costs of a shared service program are distributed among the users of that service is very important, and many alternatives exist. In New Brunswick, like the rest of Canada, with government funding of hospitals, it was decided to finance the regional programs as non-transferable elements of the budgets of the base-hospital for the regional clinical engineering. In this manner no charge is levied against the hospitals using this service, except that they are responsible for the cost of major repair parts.

Table 2 — New Brunswick clinical engineering services distribution of technical and clerical staff

District	Number of Hospitals	Number of Beds	'In House' Staff	Regional Staff
1+7	7	1262	2 technologists[1] 2 technologists[2]	3 technologists, 1 secretary
2	6	1232	6 technologists[3] 1 clerk 1 technologist[4] 1 technologist[5]	1 technologist
3+4	13	1081	1 technologist[6] 2 technologists[7]	1 technologist
5+6	7	785	1 technologist[8]	1 technologist

Notes: 1. Moncton Hospital, Moncton. 2. Hopital Dr. Georges L. Dumont, Moncton. 3. Saint John Regional Hospital, Saint John (includes 1 technologist assigned permanently to radiation oncology). 4. St. Joseph's Hospital, Saint John. 5. Sussex Health Centre, Sussex. 6. Dr. Everett Chalmers Hospital, Fredericton. 7. Hopital Regional d'Edmundston, Edmundston. 8. Hopital General Chaleur, Bathurst.

The reason for not having chargeback operation, in which the regional service is totally dependent upon the hospitals in the region for revenue, are twofold. First, a great deal of paperwork is eliminated. Secondly, and of greater importance, is that short term management of very limited budgets in the smaller hospitals would not permit those hospitals to purchase anything but the most urgent repair services on a chargeback basis. The provincial government, by providing the clinical engineering departments with assured budgets, has ensured that the consultative planning and educational aspects of the program can be accomplished. This is consistent with the priorities which were listed above.

The regional structure of the clinical engineering departments has not developed in uniformity. This is mostly due to differences in overall priorities and strategies of the various regional hospitals and any objective determination of the clinical engineering needs in the region. Because of this, only Districts 1 and 7 for example, have a major service involvement in diagnostic x-ray, and District 2 is developing a service program for all anaesthesia equipment in that region. Besides these specialised services, regular preventive maintenance of all patient care electromedical equipment is a continuous program in all regions. At the present the regional structure provides each hospital with clinical engineering service within a maximum of two hours driving time and in a actual fact most can be reached within one hour. Due to the somewhat non-uniform development of the different Regional Departments, staffing is not uniform either as shown in Table 2. As seen from Table 2 a total of three clinical engineers and 22 technologists are included in the program at the present time, not included is the staff of the Bio-Engineering Institute who provide the central consulting and coordinating function.

The functions of the central clinical engineering program based at the Bio-Engineering Institute, University of New Brunswick include consultation to designers, approval of electrical power designs for renovation or new construction with respect to compliance with relevant codes and standards, representing the Province on relevant national standards writing organisations, development of educational materials which includes audio-visual material for in-service education. The Institute is also performing specialised testing where necessary equipment is too costly to justify providing a unit for each region. In the latter area the Institute has set up a schedule whereby all Ethylene Oxide sterilisers in the Province's hospitals are routinely checked for trace concentrations of EtO. The Institute is also publishing a bimonthly newsletter as a means of informing all hospitals of activities, problems or hazards with patient care equipment or other matters of interest to hospitals.

Observations

Certain observations may be made based upon the experience gained over ten years in the development of clinical engineering services in New Brunswick.

First, the concept of a shared regional service is clearly feasible. It should be stressed, though, that a formal agreement is essential if an effective service is to be achieved. In New Brunswick we only set up Regions 1 and 7 with a formal agreement and it has turned out that this Region is the best working and has the greatest cooperation from hospital administrators and staff. A formal agreement is really more a matter of educators than anything else, the agreement being the vehicle with which an understanding among the administrators of the hospitals in the Region can be developed as to how this new service operates and how they can get the full benefit from it.

Second, it has been shown that the concept of beginning with a small staff and allowing growth in response to demands from the hospitals has been to a great advantage for a small Province with limited finan-

cial and personnel resources. It should be noted that this service was first initiated amidst loud claims, particularly in North America, of an epidemic of accidental electrocutions in hospitals, and thus these claims could be minimised without causing wild panics. Over the years the scope has broadened as mentioned above, to include x-ray, medical gases and clinical laboratory equipment as well as all types of electromedical equipment.

Third, in the time of economic constraints it has become evident that the consulting role of clinical engineering is of particular importance to the cost of health care. Careful planning has shown to be able to keep the enormous cost of replacing or modifying inappropriate equipment or facilities down without jeopardising patient care.

Finally, it has become evident over the years that there is a strong need for clinical engineering consultations to relevant government departments, mainly Department of Health. Like in New Brunswick, Canada, where the government is responsible for funding of health care it is not always that individual hospitals or regions are acting in a totally unselfish manner when requesting increases in a limited overall Provincial health care budget. Examples of where this consultation is particularly advantageous are the determinations of appropriate standards for the Province, representation of the Province on national or international standards committees and the coordination of the decentralised regional clinical engineering services.

Conclusion

The purpose of the clinical engineering services has been to ensure the safe effective use of technology in health care. We have tried to avoid sensationalising concerns about electrical hazards, while at the same time acting responsibly to reduce or eliminate hazards as they were identified. At no time has it been claimed by the Institute that the implementation of the program would result in a direct net reduction of health care costs, although certain service work has shown to be cost effective. The need for education on safe and effective use of technology was emphasised usually through informal problem solving rather than large, formal classes.

References

1) Brinkman, M., and Ridgway, M.G., (1980), "**Developing an efficient medical equipment management program**", Proc. 6th Int'l. Conf. Hospital Eng., Washington, 141-146.

2) CMBES, (1982), "**Guidelines for clinical engineering shared services**", (prepared by the Clinical Engineering Shared Service Committee, and available from the Canadian Medical and Biological Engineering Society).

3) Dorcas, D.S. and Scott, R.N., (1976), "**Clinical engineering for community hospitals — an adaptive model**", Digest, 11th Int'l. Conf. Med. Biol. Eng., Ottawa, 1501-151.

4) Guignon, E. (1980), "**Setting up a clinical engineering department**", J. Clin. Eng. 5, 69-72.

The author has accepted early retirement from the Hospital Institute of the Netherlands at Utrecht. (He writes more about his future plans in the IFHE news)

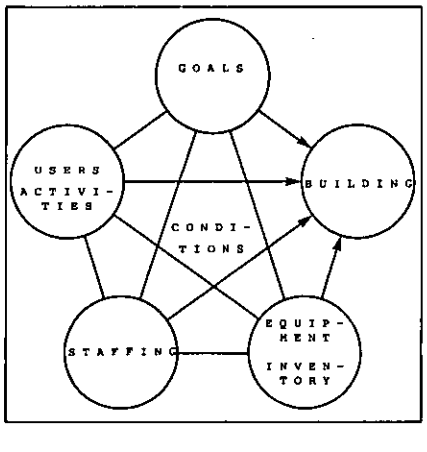
The development of criteria for testing hospital designs

JAN DE VRIES FIHospE

Most of the hospitals in the Netherlands are privately owned. The influence of the government however is steadily growing and procedures for investment regulations are laid down in the law. All initiatives for new projects, rebuilding or changing procedures to another destination, must be presented to the Ministry of Welfare, Health and Culture.

It is for this reason that today, hospital designs are examined carefully with regard to appropriateness and efficiency. To be able to perform these examinations criteria or standards must be available or developed.

The Hospital Institute of the Netherlands (NZI) has developed a system for that purpose, based on evaluation of data on hospital functions and basic material for departments of general hospitals. This was named: standard elements for the assembling of a program of requirements.



I put this first and foremost that it was not the intention to develop standard hospitals or even standard departments. We consider that every hospital is unique and total standardisation could lead to fixed situations and could even form a barrier to medical-technical progress, or a barrier for new ideas for an organisational nursing approach.

The philosophy of the method we developed is based on the following principles:

- ☐ it seems to be possible to standardise the smallest functional units of a hospital;
- ☐ such "elements" contain information about:
  - a. the activities (daily pursuits)
  - b. the equipment (necessary to do the job)
  - c. the technical requirements (existing standards and regulations)
  - d. the capacity (work-load and/of number of personnel)
  - e. the number (one or more elements can be combined in one room)
  - f. the area (needed length and width)
- ☐ the idea close to this philosophy is, for the briefing of a new hospital, a design can be composed out of these "elements".

Although these standard elements originally were developed to be used as criteria for examination procedures, experiments have proved that these standards can also satisfactorily be used for design, rebuilding or changing procedures to another destination.

With standard elements, or the philosophy behind their development, the hospital management will be able to participate actively in the development of the program of requirements, and in briefing the preliminary design.

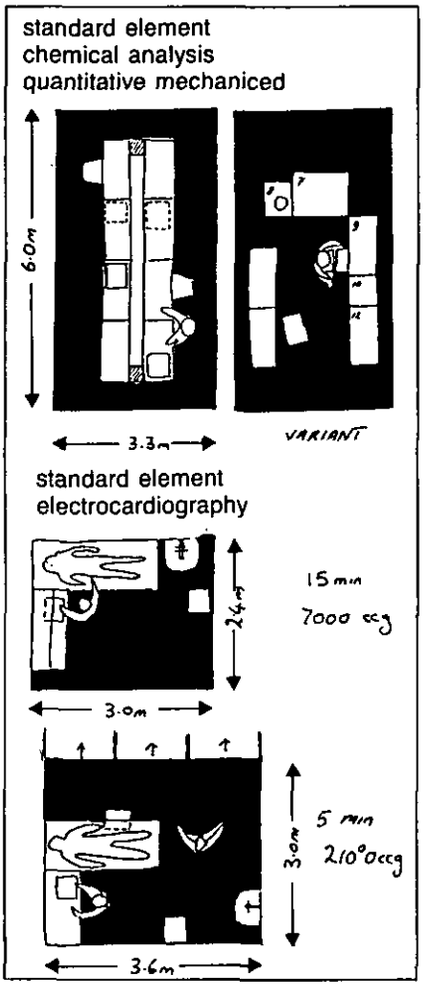
With regard to the technical requirements, the standard elements give information about: climate-conditions, lighting-level, energy, medical-gasses supply and acoustic level. About lighting — and energy supply — it will be obvious that the latest ideas about energy-conservation will be introduced. Stimulate energy-conservation, we intend to give a guideline for total maximum energy consumption expressed in: $MJ/m^2/year$.

Standard elements have been developed on:

- — x-ray
- — physiotherapy
- — clinical chemistry
- — haematology
- — microbiology
- — pathology
- — operating theatre
- — pharmacy
- — out patient depatment
- — physiology
- — kitchen
- — Central Sterile Supply Department (CSSD)

The utility of these standard elements could

be used for situations, when a hospital was to be renewed or renovated. This is described below.



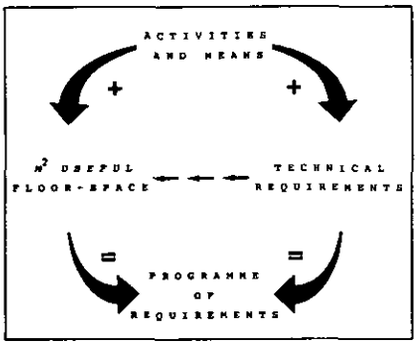
The program of requirements

A 'good' program of requirements should contain all information connected with qualitative and quantitative aspects of the building project. A program of requirements seen from the user's point of view, is a statement of all requirements, in connection with the building, the engineering facilities, the inventory and the grounds.

The description of the requirements starts with the formulation of the goals and task specification of the health care institution, to be housed. Such a program never will be produced at once, but will be built up and worked out during the longer period. The basis of the program of requirements will be created by the activities, which must be performed by the organisation in order to realise its goals.

It is our opinion, however, that the program of requirements must be completed by, or at least with the assistance of, the users of the hospital. They are the experts as far as the specific way of working or functioning is concerned. The problem is to include their know-how, without their thinking directly in terms of solutions, with regards to building requirements.

After the medical planning or functional planning of the hospital has been established and the whole organisation has reached agreement such a process can be presented as follows:



Development of standard elements

For each department there is a need to find out which professionals are required to perform their task in the respective departments. These persons or their representatives, are requested to participate in one or several meetings (of maximum two hours) in order to give information about the way of functioning for the present or even with a view to future developments. To be able to become aware of the way of working, some time must be spent on the so-called strength-weakness analyses. In doing so, it is considered whether the way of working is correct and why, or is to be considered not correct and why not. Subsequently the team builds up a picture of the terms of reference for the new department and describes the activities related to the appointed task which is under consideration. This includes all activities that are deemed necessary in order to realise the job properly.

We have the experience that a very simple way of defining the tasks can be stimulated by writing down the substantive and the belonging verb (i.e. drinking coffee, hanging up a coat, feeding a patient). Nevertheless it must be realised that this simple way of speaking about a job requires some special quality. One must bear in mind that this approach is only a means and not an objective. Always the goals must be realised. When the most important activities have been enumerated, indications should be given, which of these activities could, in principle be performed under the same conditions. Then, suggestions must be given which groups of activities must be divided specially, for whatever reason. Consequently special departments will be developed which require specific constructional provisions. Eventually the special relationship of the separate rooms will be indicated.

In practice the participating persons or employees appear to be able to indicate or give information about the necessary means (table, chair, cupboard etc.) and the required conditions (temperature, daylight, lighting level) to perform their job. The persons however will not be asked to indicate the special requirements of the respective working place. For reasons of efficiency this translation step appeared in practice to be better handled by somebody who is familiar with making special designs, departing from the point of agreed working methods, and necessary means, conditions and special relations. This special picture must be seen apart from all design solutions, these pictures have only the purpose to establish the minimum length and width of the respective spaces required to perform specific activities.

The integration of a program of requirements

Such a program contains all elements which are necessary to develop the integral design of the building and to develop the engineering design. Also it can serve for the business-like negotiation with the authorities and for the sake of examination and approval of the design.

Moreover, the organisations (ie hospital management) have had the opportunity to:

- make clear engagements, which are connected with the above-mentioned away of working
- develop the above-mentioned 'way of working' together with the hospital employees
- questions which need special attention can be noticed
- the arrangements with consultants can be concluded with a clear commissioning
- if modifications or alterations from the departure are necessary, this can be distinguished, especially with regard to the criteria for the building and engineering design
- the developed integral design can be examined in relation to the criteria developed by the hospital-team
- it enables a clearer description of (in parts) contracts with the sub-contractors
- it can be used in making a detailed inventory list in the later stage of the building process.

Experience, gained from this way of working (ie the new hospital at 'Almere', Holland) has proved that, this approach gives the greatest possible involvement for the users. Also it has proved that the investment in time for the participants could be limited. Experience teaches us as well, that it is difficult to give a blueprint who is involved; this depends on the possibilities of the hospital.

From the viewpoint of efficiency the following has to be arranged for:

- to lay-down from the very beginning the starting and finishing date
- participation cannot be without commitment
- the process must be visualised to the participants, both in the way of working and in time
- specific problems in which the participants are involved, must be made clear, in order also that a clear answer can be given, thus no open-end questions
- the different stages in the process must be terminated clearly, and the results fed back to the participants, before activities are explored to start a new stage
- checklists have to made and watched, for instance for the sake of specific subjects which need further attention.

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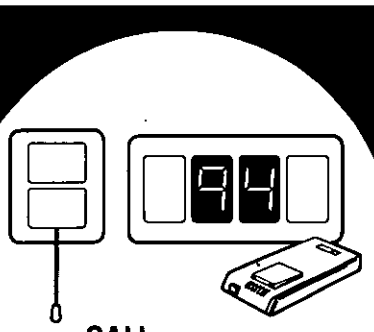

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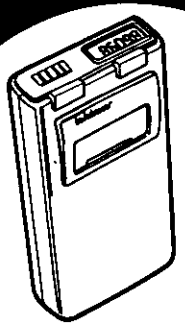

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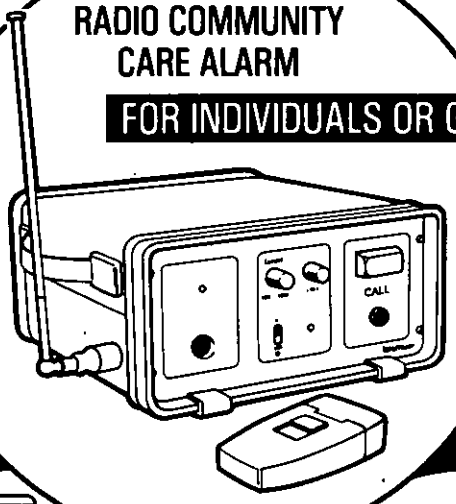

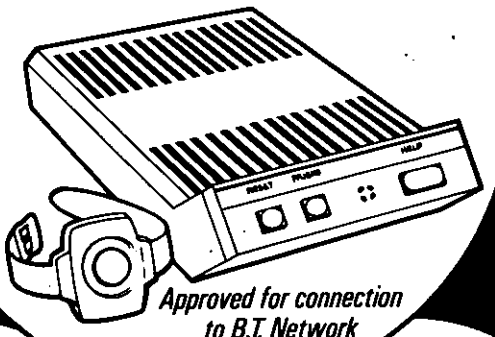

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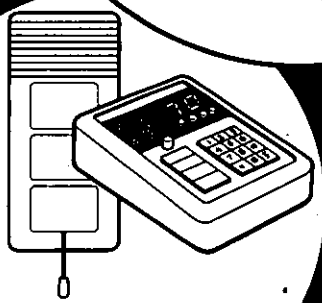

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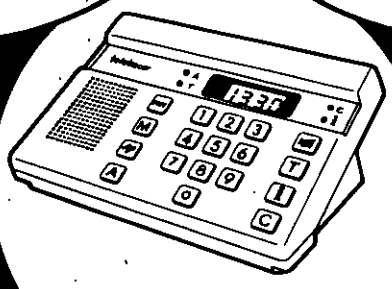

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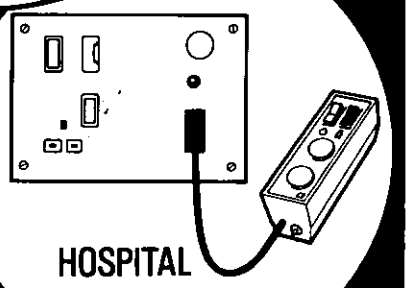

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