



Highlights of Eighth FIP Congress (London)

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The eighth International Congress of the Fédération Internationale de la Précontrainte was held in London, England, April 30 to May 5, marking the Silver Jubilee of the founding of FIP. An estimated 2500 delegates from over 30 member countries attended this conference, the world's largest on prestressed concrete.

The impressive opening ceremonies for the Congress were held at London's beautiful Royal Festival Hall. Delegates were graciously welcomed by the Lord Bishop of London, Dr. Gerald Ellison. Mr. Bryan Jefferson, President of England's Concrete Society, followed with a welcoming address. The Concrete Society was host to the FIP Congress and handled all planning, details, and arrangements with utmost efficiency.

FIP President, Prof. Ben C. Gerwick, Jr., reviewed the founding of FIP in 1953 by the great pioneers in prestressed concrete such as M. Eugene Freyssinet

of France, Prof. Gustave Magnel of Belgium and Prof. Cestelli-Guidi of Italy. Prof. Gerwick also recounted the tremendous technological advancements in prestressed concrete over the last 25 years leading to some of man's most daring and imaginative structures. It was noted that the first FIP Congress in 1953 was also held in London. Fittingly, the Silver Jubilee Congress returned.

Prof. Gerwick and the Congress paid tribute to Mme. Jacqueline Guyon presenting an inscribed silver tray in memory of her husband Yves Guyon, a truly great man in prestressed concrete who died in 1976.

The Freyssinet Medal, FIP's highest award recognizing individual contributions to the technical advancement of prestressed concrete, was awarded to three individuals:

- Prof. Franco Levi of Italy was noted for his efforts in the development of the CEB/FIP Recommendations.

He served as president of CEB from 1957 to 1968 and as FIP President from 1966 to 1970.

- Dr. Paul Abeles of the United Kingdom, who died in late 1977, was honored for his pioneering work on the concept and development of partially prestressed concrete. The Medal was accepted by his associate Mr. Jan Bobrowski.
- Prof. Alexei Alexeevich Gvozdev of the Soviet Union, who headed his country's Central Laboratory of Reinforced Concrete Theory, was recognized for developing the concept of limit state analysis for both reinforced and prestressed concrete.

Technical sessions began with an opening address by FIP President Gerwick who discussed FIP in an historical and philosophical context. Specific reviews of FIP's past 25 years relative to architecture (Juhani Pallasmaa, Finland), to engineering (Franco Levi, Italy), to research (K. V. Mikhailov, Soviet Union), and to construction (John Derington, United Kingdom), then followed.

Mr. Pallasmaa struck an impressive note that was frequently repeated during the week, when he stated, "All together, our technological civilization is in desperate need of humanistic integration of

thought and emotion, belief and action." And again, "Our greatest problem today is not any more related to means but to ends, not technological feasibility but establishment of humanistic goals and values . . ."

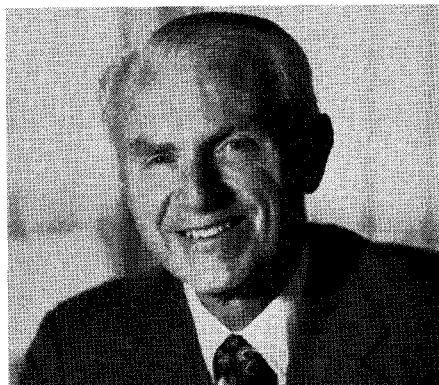
The technical program was divided into a series of five concurrent sessions:

1. Seminar Sessions (by FIP Commissions). Ten different commissions (committees) invited more than 60 speakers to prepare and present papers related to the work of the commissions. Most of these papers were collected in a four-volume set of Proceedings distributed to each Congress registrant. The Vol. 1 Proceedings are available from FIP Publications Sales, Wexham Springs, Slough SL3, 6PL, England at £20 per set (ask for 15.385).

2. Special Seminar Sessions. Each of 3 days were designated as Bridges Day, Buildings Day and Other Structures Day. Invited speakers prepared papers to fit three sessions on outstanding projects for each of the designated days. Many of these papers also are included in the pre-published Proceedings. A fourth special session was devoted to the CEB/FIP Recommendations, 3rd Edition, which had just been completed and published. Presentations discussed the application of the recommendations



Roger Lacroix, FIP President,
1978-1982



Ben C. Gerwick, Jr., FIP President,
1974-1978

to prestressed concrete.

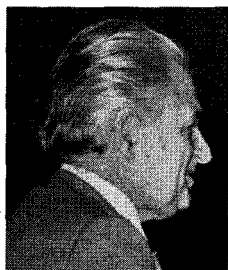
3. National Reports on Outstanding Structures. On each of the three special seminar days, reports were given by various FIP-member countries on the outstanding bridges, buildings and other structures that have been built since the 1974 FIP Congress in New York. Making the presentations for the United States were: Brice Bender, Bridges; Gerd H. Marohn, Buildings; D. P. Jenny, Other Structures.



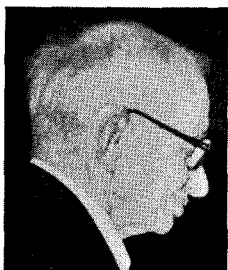
Mme. Guyon



Franco Levi



Jan Bobrowski



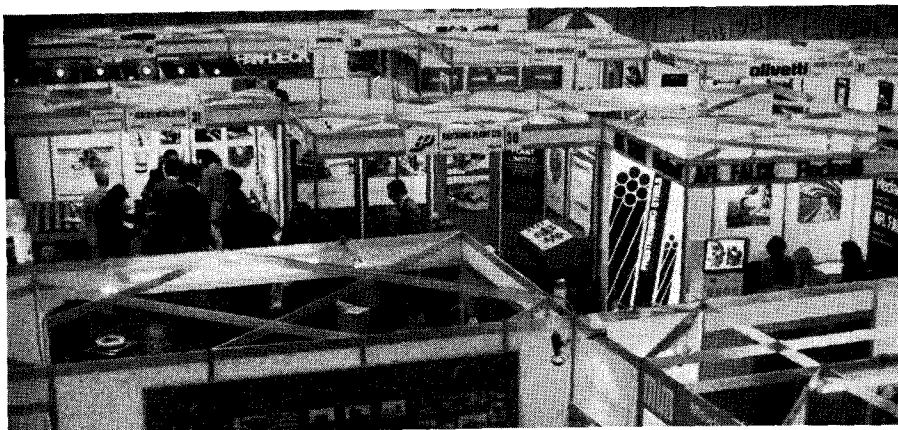
Alexeevich Gvozdev

4. Technical Paper Sessions. Papers on a wide variety of topics were presented in 14 separate sessions. The paper sessions were held in either English, French, German or Russian. The English language sessions (6 of the 14) covered design, research and construction. The task of chairing the sessions and summarizing the papers was divided between W. Burr Bennett, Jr., Prestressed Concrete Institute, and G. Somerville, Cement and Concrete Association of England. Selected papers will be published in the PCI JOURNAL and in FIP NOTES in future issues.

5. Films. Over 35 films from 12 countries, were shown during Congress week describing several distinctive projects from bridges to skyscrapers.

On the final day, summaries of all technical contributions were provided by the various session chairmen/reporters. And in the closing session, FIP commission chairmen and other selected speakers dusted off their crystal balls and tried to predict significant developments they envisioned for the next 25 years. Most of these predictions involved structures and requirements related to energy limitations and the needs of peoples throughout the world facing diminishing natural resources.

Discussion on bridge projects far exceeded any other type of structure. Although no significant new development was brought forth, it was gratifying to see the global applications of segmental



Fourteen countries exhibited products and equipment.

bridge construction. Sea structures, both floating and fixed, have severe environmental demands and many of the papers dealt with analysis and research relative to these problems.

It was noted that a number of research reports dealt with measurements and tests on full-scale test structures, on structures in service and on structures that were scheduled to fall under the wrecker's ball. As more prestressed concrete structures reach the end of their useful life, these types of tests and investigations will be performed more frequently.

In the closing minutes of the Eighth FIP Congress, awards were presented as follows:

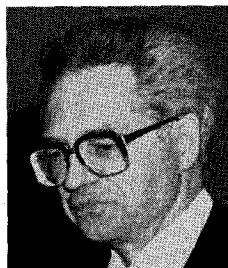
- FIP Medal to: Jan Bobrowski (United Kingdom); Mme. A. B. Druganova (Soviet Union); Dr. Hans Wittfoht (Federal Republic of Germany); Carlos Fernandez Casado (Spain); Dr. Silvano Zorzi (Italy); Jean M. Muller (France).

- FIP Honorary Membership to: Leo Russell (United Kingdom); Dr. Karl Kordina (Federal Republic of Germany); Fernand A. P. Dumas (France).

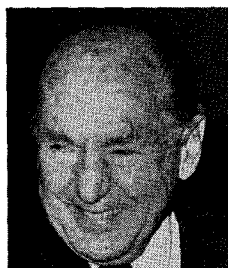
In addition to the technical and business sessions, the week included various social activities ending in a black-tie dinner/dance for delegates and their ladies at the historic London Guildhall.

Tours were also arranged for those wishing to visit construction sites in the London area.

Of special interest was a tremendous exhibition of products related to prestressed concrete. Over 65 stands, representing 14 countries, showed the sophistication and development in



Hans Wittfoht



Carlos Casado

equipment and products since the initial introduction of prestressed concrete.

In another special touch, a photo-historical display pictured all the early pioneers in prestressed concrete and FIP, including scenes from earlier Congresses. The FIP member countries were permitted to depict the two jobs or developments that were most significant to the growth of prestressed concrete in each country, and 30 presentations were displayed.

The United States' choices were the historically significant forerunners: The Walnut Lane Bridge, and the development of the 7-wire strand which made plant production of prestressed concrete

products economically feasible.

Before closing, Mr. Holmberg of the Swedish Concrete Association invited delegates, by speaking in three languages, to attend the Ninth FIP Congress in Stockholm, Sweden, June 7-13, 1982.

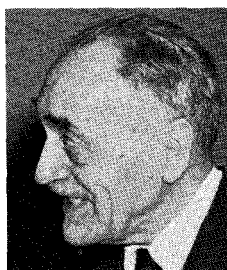
The next four-year period of FIP affairs will be guided by the following officers: President, Roger Lacroix, Paris, France; Deputy President, John A. Derrington, London, England; Senior Vice-President, Peter Misch, Wiesbaden, Germany. Ben C. Gerwick, Jr., San Francisco, USA, was named Honorary President.



Jean Muller



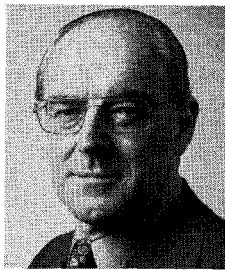
Silvano Zorzi



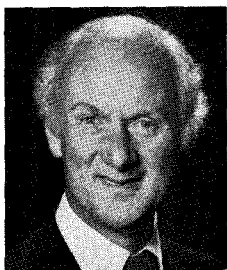
Fernand Dumas



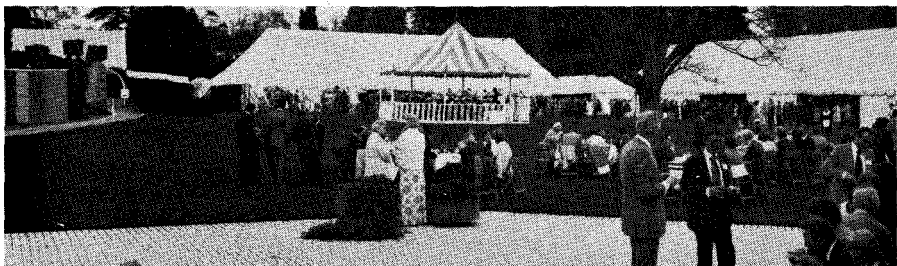
Karl Kordina



Bryan Jefferson



Roy Rowe



Technical Contributions

Of the fourteen technical sessions held at the FIP Congress, six were given in the English language. The other eight sessions were conducted in French, German or Russian. In all, nearly 50 papers were contributed and discussed in English. They cover research, design and construction of prestressed concrete.

Chairmanship or reporting of the English-language sessions was shared by W. Burr Bennett, Jr. (United States) and G. Somerville (United Kingdom).

Four volumes of the FIP Congress

proceedings have been published and were distributed to the Congress registrants. A fifth volume containing summaries of the technical sessions including the history of FIP in architecture, engineering, research and construction, will be available in the future.

Copies of individual papers (or the FIP Proceedings) can be obtained from FIP Headquarters, Wexham Springs, Slough SL3, 6PL, England. Following is a listing of papers presented in English, categorized by "research," "design," and "construction."

Research

- The Allowable Limit of Salt Content in Reinforced Concrete and Prestressed Concrete, *H. Oshima* (Japan)
- Creep of LWA Concrete for PCR/V, *P. J. E. Sullivan* and *G. A. Khoury* (UK)
- A Numerical Visco-Elastic Stress Analysis for Prestressed Concrete Pressure Vessels, *M. Cerny* (Czechoslovakia)
- Change of Concrete Strength After Long Term Prestressing Reduction of Tensile Strength at Decompression, *S. Kajfasz* (Poland)
- Developments in Use of Unbonded Tendons in Building Construction in the USA, *C. Freyermuth* and *N. H. Burns* (USA)
- Partially Prestressed Low Density Lightweight Concrete, *O. Berge* and *A. Losberg* (Sweden)
- Wall Movements of Prestressed Cylindrical Concrete Tanks, *J. F. O'Halloran* (Republic of Ireland)
- Theory of Pore Pressure in Reinforced Concrete Cylinders, *C. T. Morley* (UK)
- Strength and Deformation of Post-Tensioned Beams with Mortar Filled Joints, *K. Okada* and *K. Kobayashi* (Japan)
- Shear Strength of Prestressed Concrete Beams Without Web Reinforcement, *M. W. Braestrup* (Denmark)
- Horizontal Shear Strength at the Interface of Composite Concrete Structures in Flexure, *M. Vesa* (Finland)
- Zero Maintenance Expansion Joints and Bearings, *S. C. Watson* (USA)
- Monitoring Prestressed Concrete Bridges by Progressive Cantilever Method, *W. Pfeil* (Brazil)
- Investigation on a Prestressed Concrete Highway Bridge, which Stood 20 Years Under Traffic, *T. Ohta* and *K. Kakuta* (Japan)
- Testing of Full-Scale Models of Joint Between Floor-Slab and Shear Wall Done by Prestressing Under Cyclic Load, *B. Petrovic* (Yugoslavia)
- Dynamic Properties of an Existing Six-Storey Building in Tokyo, *S. Machida* (Japan)

Design

- Standardised Bridges of Prestressed Prefabricated Elements, *K. Linna* (Finland)
- Time-Dependent Stresses and Deformations of Segmental Structures, *A. Ghali*, *M. K. Tadros*, *W. H. Dilger* (Canada)
- Design of Gomti Aqueduct, India, *V. M. Madge*, (India)
- Greta Bridge: Keswick Northern Bypass, *T. G. Hancock* and *T. N. Pemba* (UK)
- Runnymede Bridge, *R. Benaim* and *W. Smyth* (UK)

Technical Contributions

- The Design and Analysis of the New Highway Bridge Over the Gouritz River Gorge in South Africa, *A. C. Liebenberg* (South Africa)
- Prestressed Concrete Bridges Incorporating Mechanical Energy Dissipating Devices for Earthquake Resistance, *R. W. G. Blakeley* (New Zealand)
- Precast Prestressed Concrete Box Girder Bridge System with Overhangs, *H. V. S. Ganga Rao* and *N. B. Taly* (USA)
- Web-Crushing in Prestressed Concrete Girders, *T. I. Campbell* (Canada)
- Some Practical Aspects of Design and Construction of Hi-Rise Buildings Using Cast in Place Post-Tensioned Concrete, *W. Hanuschak* (Canada)
- A Critical Review of Code Requirements for Circular Prestressed Concrete Reservoirs, *J. Vessey* and *R. L. Preston* (New Zealand)
- Concrete Precast and Prestressed Shell Units for the Roof of Chemical Depot, *M. Mihailescu* (Romania)
- Economical Consideration in Comparing Post-Tensioned Containment Structures Against Other Types of Containments for Nuclear Power Plants, *P. Reinhardt* (USA)
- Fibre-Reinforced Cement Composites in Partially Prestressed Concrete—Serviceability Criteria, *D. C. O'Leary, J. Saunders* and *N. J. Dave* (UK)
- Design and Construction of a Prestressed Concrete Pressure Chamber for 69N/mm² (10,000 psi), *P. Dawson* (UK)
- Ground Anchors at Devonport Nuclear Complex, *C. Truman-Davies* (UK)
- New Roads System—Prague, *J. Cermak* (Czechoslovakia)
- Whitemud Drive Bridge, Edmonton, Alberta, *R. C. Aitken* (Canada)
- Geotechnical Movements Associated with Scammonden Bridge, *C. J. F. P. Jones* (UK)
- Restoration of Tasman Bridge Following a Ship Collision, *J. A. Leslie* (Australia)
- Installing and Anchoring of Tendons for Post-Tensioned Offshore Construction with Slip-Forming, *H. R. Muller* (Switzerland)
- The Ninian Offshore Platform, *D. Draisey* and *Huynh* (France)
- Structural Damage in an Offshore Concrete Platform—the Cause and Cure, *K. Naesje, P. C. Dahl* and *J. Mosknes* (Norway)
- Cable-Stayed Roof Structure, National Athletics Stadium Canberra, *J. L. Koch* (Australia)
- Taoyuan International Airport, Terminal Building—Structure and Suspended Roof Post-Tensioning Applications, *I. M. Yueh* (Taiwan)
- Post-Tensioned Diaphragm Walls at Irlam o'the Heights, Manchester, *M. Fuchsberger* (UK)
- The Application of Prestressing at the Construction of the International Conference Centre Buildings in Vienna (UNO—City), *S. Dorney* (Austria)
- Prestressed Pressure Tunnels, *F. Thurnherr* (Switzerland)
- Floating Concourses—Brighton Marina, Sussex, *R. B. Hyde* (UK)
- Prestressing and Heysham Nuclear Power Station, *R. Crowder* (UK)
- Some Experiences in the Use of Structural Precast Concrete in Building Since the 1st Congress, *F. W. Gifford* (UK)

Construction

- Prefabricated Arch-Shaped Bridge Beams, *T. Cool* and *J. Groenvelde* (Netherlands)

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World Contributions to Prestressed Concrete

A special feature of the FIP Congress was an historical photo-exhibit displaying the two most significant projects or developments contributing to the advancement of prestressed concrete in each member country. These are listed below in alphabetical order by country.

AUSTRALIA

- Gladesville Bridge (1964)
- Sydney Opera House

AUSTRIA

- Almbrücke in Oberösterreich (1977)
- Innbrücke Kufstein, Österreich (1976)

ARGENTINA

- Paysandu-Colon International Bridge
- Railway Complex Zarate—Brazo Largo

BELGIUM

- Helicoidal Staircase
General Motors Continental
Antwerp (1951)

BRAZIL

- Rio-Niteroi crossing
- Colombo Salles Bridge, Santa Catarina
(1975)

CANADA

- Olympic Stadium, Montreal
- CN Tower, Toronto

CZECHOSLOVAKIA

- Pretensioned floor slabs (1923)
- Precast prestressed standard girders for
railway bridges (1945)
- Klement Gottwald Bridge, Prague trains
in boxes, cars on deck (1971)

DENMARK

- Suspension bridge across Lillebaelt
(1970)

FINLAND

- Ounasjoki Bridge, Rovaniemi
[first by cantilever] (1967)
- Lauttasaari Watertower, Helsinki (1959)

FRANCE

- Annet sur Marne (1949-50)
- Port du Havre
croquis delamain by Eugene
Freysinet (1949)

GERMANY F.R.

- Siegthal Bridge, Eiserfeld
cantilever construction (1969)
- Multistory Building, University Clinic,
Cologne (1973)

HUNGARY

- Roadway bridge over River Hernad
(1950)
- Crane girder (Hoyer system) Budapest
(1949)

INDONESIA

- New segmental bridge

INDIA

- Spherical tank for Canada-India
Reactor at Trombay, Maharashtra
- Hindustan Aeronautics Ltd., hangar for
helicopter factory, Bangalore

ITALY

- Tunnel lining Underground Railway
System, Rome (1971-73)
- Bridge over Mar Piccolo, Tananto

ISRAEL

- Zin Railway Bridge, precast segmental

IRELAND

- Prestressed grain silos, Dublin (1953)
- Flannery Bridge, Galway (1953)

YUGOSLAVIA

- Great Exhibition Hall, Belgrade (1957)
- Motorway Beograd-Noví Sad, over the
Danube River

JAPAN

- Hamana Bridge (1976)
- Iwahana Overpass, railway bridge (1973)

NEW ZEALAND

- Lower Shotover Bridge, Queenstown
(1975)
- Prestressed concrete Penstocks,
Benmore Hydro on Waitaki River
(early 1960s)

PORTUGAL

- Mosteiro Bridge over Douro River (1973)

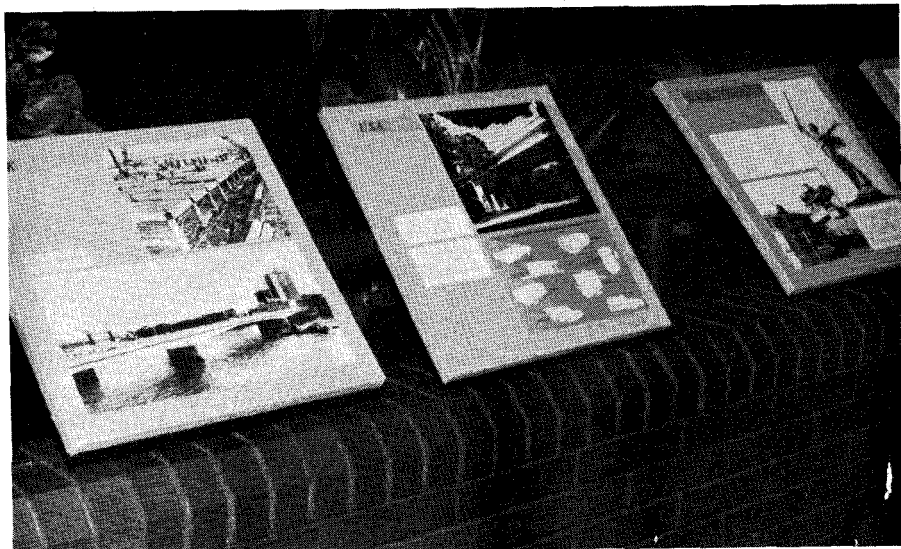
ROMANIA

- Sport hall in Bacau-Town
- Highway Bridge over Somes River at
Satu-Mare Town

SWITZERLAND

- Chillon Viaduct, Geneva (1968)

(Continued following page)



Some displays of projects and developments contributing to the advancement of prestressed concrete.

- Val Nalps bridge, Canton Graubünden (1957)

SWEDEN

- AB Stangbetong Factory, Stockholm (1941)
- Klockerstam Bridge over Angermanälven (1943)

SPAIN

- Tempul Aqueduct
- Containment structure for experimental reactor

TAIWAN

- Sesame Plaza (17 stories) Taipei
- Yuan Shan Bridge on North-South Freeway, Taiwan

THE NETHERLANDS

- Zeeland Bridge across Eastern Scheldt (1965)
- Outlet sluices in the Haringvliet (1957-67)

UNITED KINGDOM

- Sight Hill, Scotland (all precast prestressed building)
- New London Bridge

UNITED STATES

- Walnut Lane Bridge, Philadelphia (1950)
- 7-wire strand

SOVIET UNION

- Segmental Bridge over Moscow River, for cars and subway trains (1969)
- Statue of Motherland

