bulletin

september, 1968

association of polish engineers in canada
stowarzyszenie techników polskich w kanadzie
association des ingénieurs polonais au canada

ASSOCIATION OF POLISH ENGINEERS IN CANADA

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THE ASSOCIATION
OF POLISH ENGINEERS
IN CANADA

INCORPORATED 1944

Association Honours Antoni Rościszewski

Antoni Rościszewski P. Eng. was elected Honorary Member of the Association at this year's Annual Convention. This honour was bestowed on Mr. Rościszewski for his distinguished service and valuable contribution to the Canadian industry. During 25 years of fruitfull work, he held various positions of responsibility in design, development and construction of arms for Canada's Service Forces and her Allies.

He is a graduate of Warsaw Technical University (1925) in Mechanical Engineering. His already prominent professional career in Poland's industry was interrupted in 1939 by World War II. After coming to Canada in 1942, he started to work in the newly founded factory "Small Arms Ltd...".

For his outstanding services during war time production effort, he received a letter of appreciation from the Minister of Supply, Hon. C. D. Howe. Prior to his retirement in 1967 Mr. Rościszewski was for a period of four years Technical Director of the Canadian Arsenals Ltd..

He was a very active member of the Association from the beginning of its formation. In spite of the heavy load of professional duties, he managed to find time to work for our organization and helped it to expand.

He held the office of the President of the Association in 1943 and Chairman of Toronto Branch in 1952. For several years he was a member of Toronto Branch Council.

THE LIST OF HONORARY MEMBERS
of The Association of Polish Engineers in Canada

Hon. C. M. Drury
H. W. Lea
Dr. I. Pawlikowski
F. M. Piasecki
A. Rościszewski
L. Austin Wright

TORONTO-DOMINION CENTRE AND NOTES ON DESIGN OF HIGH RISE STEEL BUILDINGS

by L. ALEJSKI, P.Eng.

PART I. *Description of the Toronto-Dominion Centre Complex.*
PART II. *Design of high rise buildings including general remarks on tall steel buildings, current practice, and future trends.*
PART III. *Recent research on wind forces on tall buildings.*

DESCRIPTION OF THE TORONTO DOMINION CENTRE COMPLEX

PART I

THE planning and building of beautiful cities has captured the immagination of statesmen, generals, artists, architects and town planners almost since beginning of civilization. Ancient Babylon and Rome, moderne Paris, Washington and Brasilia, all attest to man's desire to make his surroundings as attractive as possible. The urge to create an orderly and pleasant environment for working and living remains strong, with the initiative being taken over by big men of private business and finance.

A new City Hall Centre has given the citizens of Metropolitan Toronto a new focus and has re-awakened their interest n downtown Toronto.

The second project, the Toronto Dominion Centre, comprising two high rise office towers, one storey Banking Pavilion and an extensive substructure three storeys below street level will provide a working space to some 15,000 people. With its own amenities, and shopping centre it will be truly a city within a city.

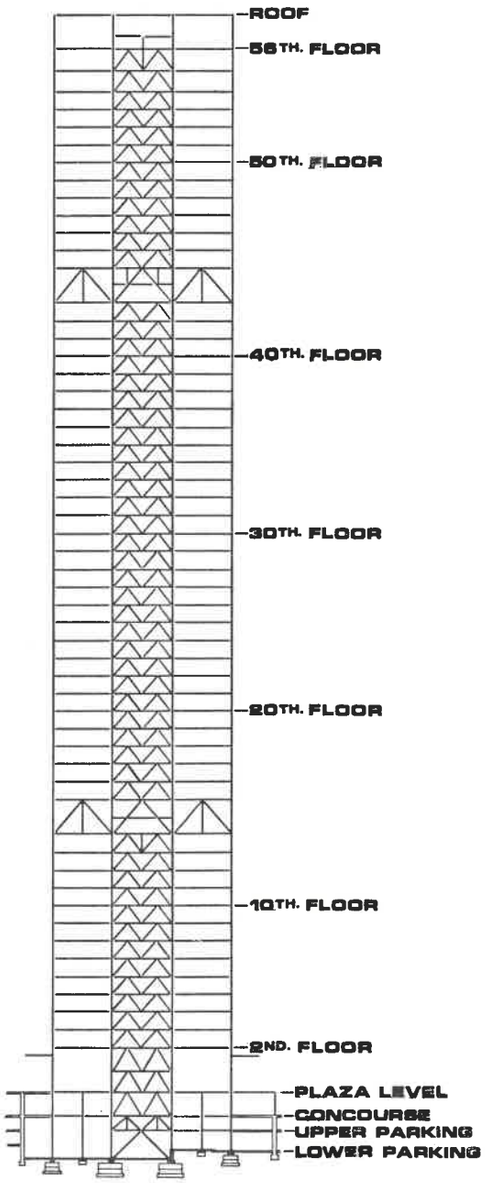
Plans for this $125 million project, one of the largest of this kind in the world, were first announced in November 1962. Ground was broken in April 1964, beginning the excavation of 260,000 cubic yards of earth and 100,000 cubic yards of rock. Working drawings were started the same month.

The first building of the complex to be erected was the 56 storey Bank Tower. This building is rectangular in plan measuring 124 feet x 244 feet, and has a height of 736 feet from plaza to roof level. Its total gross floor area above plaza is 1,686,800 square feet, of which 1,300,000 square feet are rentable. Elevators and services are located in central core, whose area decreases with the height due to a reduction in the number of elevators thus giving the following rentable areas for the four levels:

High Rise	26,500 sq. ft.	(91% of total area)
Intermediate High Rise	25,500 sq. ft.	(88% ")
Intermediate Low Rise	24,500 sq. ft.	(85% ")
Low Rise	23,500 sq. ft.	(82% ")

Thirty-two main computer controlled passenger elevators and three service elevators provide vertical transport. Cars travel at high speed ranging from 800 feet/min. through lower floors, to 1400 feet/min. at upper floors.

Three mechanical equipment floors, each two storeys in height, and located at 14th, 43rd and 56th floors, supply the services for the building, including year-round temperature and humidity control, air filtration and ventilation. The refrigeration plant situated on the 56th floor has a capacity equivalent to producing 6,700 tons of ice every 24 hours. A completely independent steam-driven power generator assures a power supply to all essential motors including elevators, and lighting systems in the event of a power failure. The nerve centre for the buildiog's complex mechanical and electrical system is located on the same 56th floor. Here an operator is able to flash a picture of any particular system onto a projection screen incorporated into the console and thus check out the source of the problem. Automatic electronic devices are constantly scanning temperatures and humidities thoughout the building and will sound an alarm when off-normal readings occur.



TYPICAL CROSS-SECTION

FIG. 1

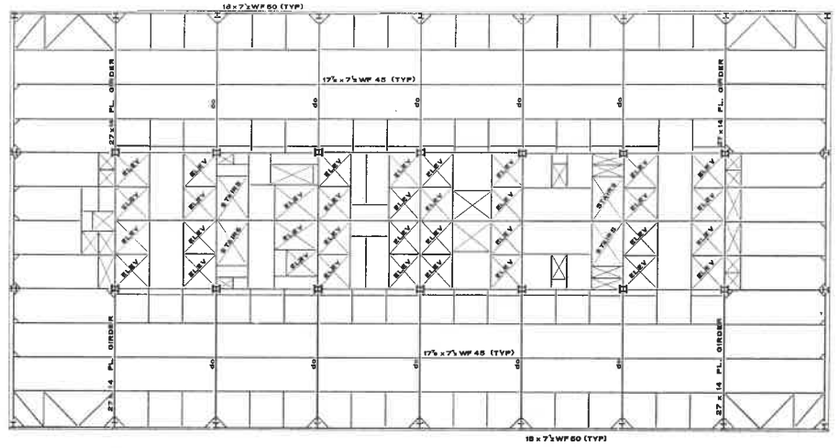
The 54th floor leads to an observation gallery on the 55th floor, offering a splendid view not only of Toronto and its surroundings, but stretching southwards as far as Niagara Falls and the New York shore of Lake Ontario. Typical storey heights except for mechanical floors and lobby, is 12 feet with a clear height of 9 feet.

Design live loads for office floors are 75 lb/sq. ft., on floor beams and girders and 125 lb/sq. ft., on the deck. Both loading include 25 lb/sq. ft., allowance for demountable partitions. Increased live load for deck was chosen in order to accommodate concentrations of loading due to special office equipment like rows of filing cabinets, safes and computers.

The specified grades of steel were A44, later changed to CSA G40.12 (fy=44) for beams, girders and vertical bracing, and ASTM A36 (fy=36) for columns and trusses. For base plates steel conforming to ASTM A284 (fy=30) was used.

The typical cross-section (fig. 1) and floor framing (fig. 2) show the basic structural scheme. Outside the core areas, the typical floor framing employs a 3 in. ribbed steel deck capable of developing composite action with 2½ in. poured concrete topping. This deck spans 10 feet between steel beams which are supported on steel girders located on the transverse column lines. The 3,500 tons of deck is of a blended system, in which a two foot width of cellular deck was provided for electrical raceways in every 5 feet width of floor.

The column loads are of the order of 14,000 kips and so they had to be custom designed. For interior columns the 'jumbo' wide flange column sections weighing up to 734 lb/ft. were employed for the first time in Canada. These huge



TYPICAL FLOOR FRAMING PLAN.

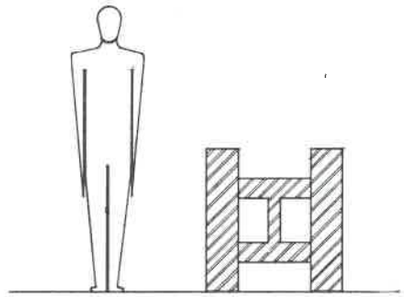
FIG. 2

sections combined with two 37 inches by 8 inches plates, automatically welded and weighing nearly 3,000 lbs/lin. ft., were used for bottom tiers (fig. 3). For exterior columns 3 plate welded sections were used. Columns rest on two tier grillage set into shale about 60 feet below plaza level (fig. 4). The grillages including 15 in. thick base plates weigh up to 80 tons.

Welded wide flange beams, which became available after the project was started were used from 10th floor to the roof. All steel was fireproofed giving 2 hour rating for beams above plaza and 3 hour rating for beams below plaza. Columns were given 3 hour and 4 hour rating respectively.

Of interest in the structural design of the building are methods employed to resist lateral wind forces and the control of temperature movements imposed on the framework by the architectural facade.

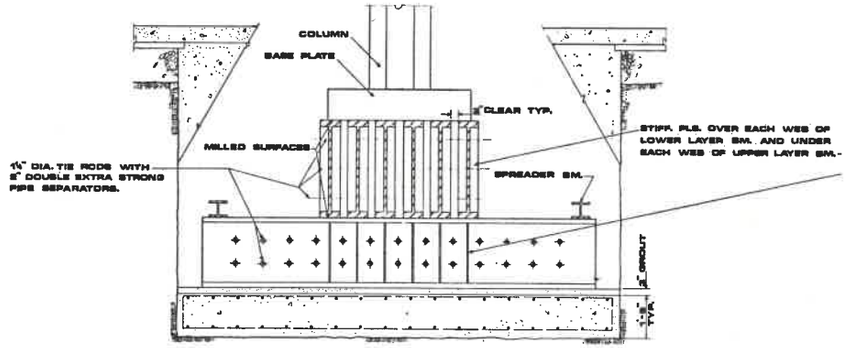
The wind pressures required by the City of Toronto Code at the time the design of the building was started, were much less severe than the pressures suggested by the National Building Code of Canada. After considerable study it was decided that the stress design of the structure should be based on the National Code. At the same time, it was concluded that the roughness of the surrounding terrain would produce a considerable less severe gradient wind velocity profile than that suggested by the National Code. Sway calculations, therefore, were based on more realistic lower pressures. A maximum sway limitation of plus or minus .002 times the height was imposed as a design criterion.



MAIN CORE COLUMN

FIG. 3

The 120 feet width of the building results in a slenderness ratio of slightly more than 6:1. The imposed sway limitations required the full width of the building to



TYPICAL GRILLAGE
FIG. 4

resists the horizontal wind forces. A system of cantilever trusses located at two lower mechanical floors was adopted to bring this total width of the structure into play against overturning (fig. 5 & 6). This solution in allowing simple beam to column header type connections proved much more economical than the bulky fixed end connections despite the fact that they had to be reinforced to be capable of developing a horizontal force equal to 2½% of the column axial load. Only at each end of the building were rigid frame bents required. Diagonal core bracing on each available column line was utilized to provide shear resistance to wind forces.

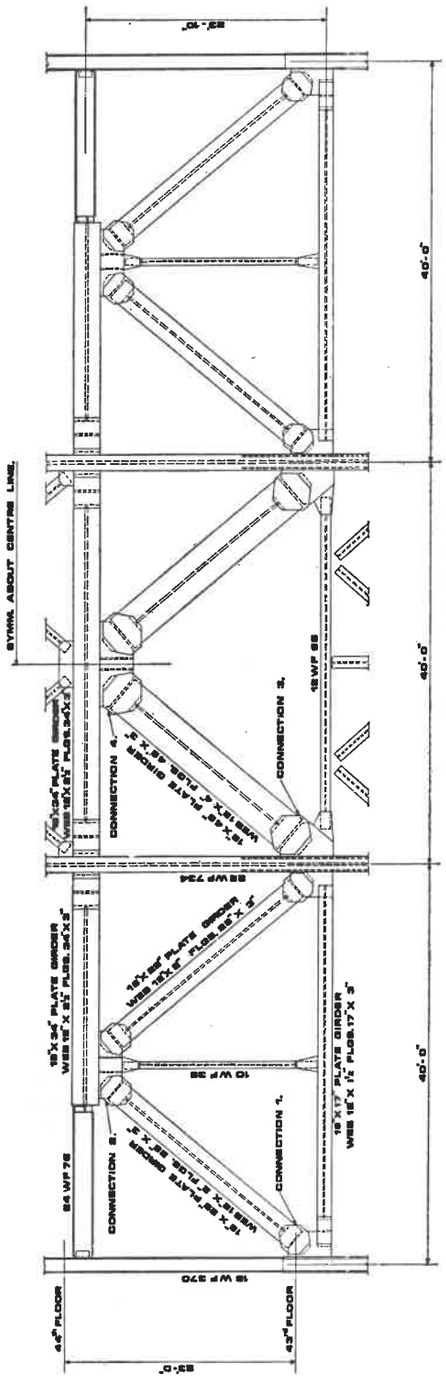
The building is completely clad in glass and structural steel.

Continuous 3/8 in. steel plate fascias extend horizontally along each spandrel line and vertically at each corner column. Because of architectural requirements, no expansion joints are present in the plate fascias. The fascias served as outside forms for L. W. concrete back-up which separates them from structural members behind. 8 WF 17 verticals at 5 feet centres, which happens to be the module of the building, are welded to the fascias. These verticals also serve as rails for the window washing platform and give support to 5 inch channels box sections forming window mullions. They are interrupted by expansion joints at two storey intervals. There are 20 miles of mullions and nearly 7 miles of spandrel plates forming the frames for the building's 7,550 windows and making the building the largest steel clad building in the world. The total weight of steel in the cladding is approximately 3,300 tons.

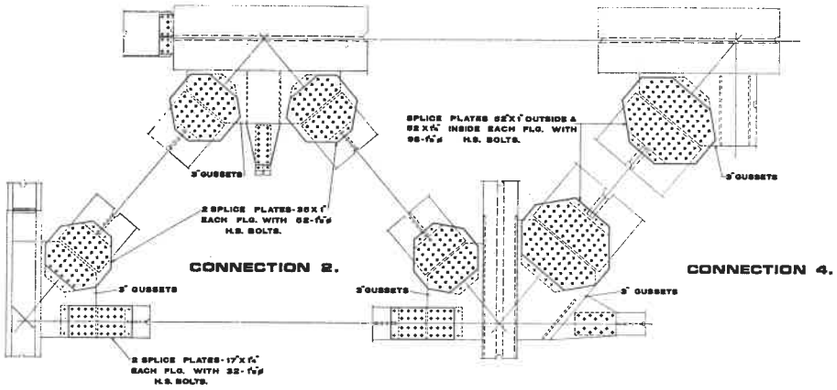
Comprehensive heat transfer calculations were required before the cladding connections could be finalized. The natural temperature elongations of the horizontal fascia plates results in substantial 'hoop stresses' which are required to be resisted at each corner column. A horizontal truss system in the plane of floor at each corner was designed in order to distribute the thermal forces to the framing. To restrict vertical thermal movement, the corner columns were restrained by trusses between the uppermost floor and roof.

Lateral buckling of the fascia between end restraints is prevented by studs welded to the fascia plate and anchored into the concrete back-up. Because of the excessive bending stresses which would result in the horizontal cladding under the natural temperature movement of the two storey high mullions, the upper fascia is anchored to the back-up with straps which allow vertical movement of the cladding, while still restraining it against lateral buckling. To completely eliminate the heat flow between the interior beams and fascia, the temporary connections which were required to hold the fascia plates during erection, were cut through after the concrete back-up had set.

A total of 33,500 tons of structural steel were used in constructing the frame of



TRUSS DETAILS.
FIG. 5



CONNECTION 1. CONNECTION 3.

FIG. 6

the building, of which 1,000 tons were used for reinforcement of holes in webs of girders for passage of mechanical ducts. Columns accounted for 60% of the total tonnage. For comparison the table below summarizes the relevant data for other recent Canadian high-rise steel-framed buildings.

Building	Height	Steel Tonnage	Steel Pounds/Sq. Ft.
C.I.L. (Montreal)	430'	11,700	35.5
Champlain Hotel (Montreal)	473'	5,100	23.2
Toronto-Dominion — 46 st.	600'	21,000	37.0
C.I.B.C. (Montreal)	604'	16,700	56.0
Royal Bank of Canada (Montreal)	612'	48,700	50.0
Toronto-Dominion — 56 st.	736'	33,500	39.0

Toronto-Dominion Bank Bldg., as well as being the tallest building in the commonwealth, is the largest shop-welded office building in the world to date.

In addition to all shop connections, many of the columns and core bracing members are built up welded sections employing plates up to eight inches in thickness. To fabricate such heavy sections a three-headed automatic welded device was developed in order to lay longitudinal welds in one multiple-pass operation. The lead head used CO2 flux-cored wire, followed by two submerged arc heads. In total, some 275 tons of weld metal was employed in assembling the various frame components.

Erection of structural steel to the tenth floor was by means of one crawler crane capable of lifting 110 tons and one mobile crane rated at 125 tons. These cranes could erect more than 500 tons of steel in one day. All structural steel above the tenth floor was erected by 3-35 ton guy derricks fitted with 120 ft. masts and 100 ft. booms. As the building frame rose higher, hoisting capacity of the derricks was slowly reduced to 15 tons for the final lifts due to necessity to use lighter cable and the hoist times took more than 15 minutes for the highest lifts. Topping-off came 14 months after the first steel was put in place. Exactly 497,954 bolts were used for field connections.

Decking following closely steel erection was hoisted in ten ton lifts to the two uppermost floors of erected steel before derricks were jumped and immediately installed on the upper floor in order to provide a working platform and avoid temporary planking.

Erection wind and stability calculations required that fascia installation should be maintained 6 storeys behind steel erection, poured concrete 8 storeys behind and glazing installed 10 storeys behind.

Second building of the complex to be erected was a single storey Bank Pavilion. This building, 30 feet high and square in plan with sides measuring 150 feet, provides 22,500 sq. ft. of column free area for banking facilities.

The columns employed are cruciform in shape and spaced at 10 feet centres. Steel plate and angles fascias, continuously welded to columns, form a rigid wind resisting tube.

A gird roof with 4'-6" deep girders at the same spacing as the supporting columns was butt welded in jacked-up position to achieve a camber of 6 inches. Girders are supported on rocker bearings which allow the roof free vertical and horizontal movement. The flanges of the girders are 1½ inches thick and in their width they are stepped down in inch decrements varying from 14 inches at centres to 6 inches at columns. Steelwork is completely welded and exposed with outside glass panels being set between solid steel bars.

The decision to proceed with the construction of the second 46 storey tower was made in June 1966. While architects and engineers proceeded with working drawings, ground for the second tower was broken in mid September and excavation was well under way by the end of that month. Architecturally identical to its 56 storey neighbour, the new building is now nearing completion and at 600 feet height is Toronto's second tallest. In Plan it is one bay shorter measuring 124 feet x 214 feet. It has 46 floors including 2 mechanical floors with a rentable space of approximately 900,000 sq. ft.

Because of the mechanical requirements the standard wind resisting system of rigid outside bents with braced core bent was used.

The use of a computer permitted an exact analysis of the wind shear distribution between bents which was much more economical, as far as the sizes of the outside fixed end girders were concerned, than the classical 'longhand', quite approximate, method which was in use up to that time.

At the outset of the construction a four months hiatus in steel industry brought the project to a complete standstill. The resulting period of inactivity in the field allowed the engineers time to modify the erection procedure. Columns were redesigned to 3 storey lifts and a new technique was evolved in the steel cladding erection. Cladding was preassembled at ground level in two-storey units, one bay wide, and these large prefabricated sections were then lifted into place. When work on the project was resumed, it helped to speed up the construction, resulting in three floors being erected in two weeks.

The three buildings are sited on six acres of a landscaped plaza whose grey granite surface is embellished by trees, planting areas, lights and benches. From plaza, stair entrances topped by solid post-tensioned granite slabs, 14 inches in thickness and spanning 20 feet, provide access to the concourse. A wide variety of shops, services and restaurants together with a cinema and full scale post office are located at this level. Here also are huge heavily reinforced concrete bank vaults.

From the concourse, escalators, lead directly to the lobbies of the towers which by day or by night offer an opportunity to appreciate fully the effect of spacious elegance achieved by simplicity of lines and choice of materials used. Below the concourse are two levels of parking, access to which is provided by suspended spiral concrete ramps.

The whole of the substructure except for areas directly below towers is reinforced concrete flat slab, with columns spaced 20 feet in north-south direction and 30 feet in east-west direction. The three floors below street level have an area of 450,000 sq. ft. and required 120,000 cubic yards of concrete and nearly 4,000 tons of reinforcing steel.

During construction of the substructure the excavated sides were protected by a tie-back system of shoring. Tie backs, high tensile wires replacing the rakers of the old system, were grouted in 20 feet deep predrilled holes in rock and tensioned to

150 per cent of the design load for 30 minutes. This afforded a check of the holding power of the installation. After 30 minutes the tension was reduced to the value equal to the design load and wires were anchored. The above system allowed the contractor free access to every corner of the excavation and gave him ample space to manoeuvre his tracks and cranes and saved him from patching up and waterproofing all those openings left normally after rakers have been removed.

To construct a project of this magnitude, thousands of drawings were needed. Somebody, recordminded, did establish that if all issued drawings were placed on one pile, that pile would be higher than the 56 storey tower! Records or no records, the two towers of the Toronto-Dominion Centre have changed the Toronto skyline.

Architectural designer of the complex is Ludwig Mies Van der Rohe, one of the world's greatest contemporary architects. He is responsible for all those simple modular lines, and for that black paint.

Lately, Bank of Commerce has employed I. Pei, another of the world's leading architects and announced its intention to proceed with the construction of the Commerce Court. Toronto is on the go. New adventure in structural steel is ahead of us.

(To be continued)

SIR CASIMIR GZOWSKI MEMORIAL

On May 25th, 1968 the members of the Association of Polish Engineers in Canada gathered in Toronto for their XXVIII Annual Convention, joined the citizens of Toronto to honour one of Canada's great pioneers Sir Casimir Stanislaus Gzowski.

Exactly four years have passed since May 1964, when the XXIV Annual Convention of the Association held in Sarnia, adopted a resolution to pay public and everlasting tribute to Sir Casimir Gzowski, the famous Canadian and Polish engineer. This tribute was to take the form of a monument. The assembled delegates passed a motion asking the Executive of the Toronto Branch to appoint a Committee to pursue this matter. On behalf of the Toronto Branch, two of its members. Dr. Z. Przygoda and Mr. M. J. Bornet canvassed the prominent members of the engineering profession and of the public in Ontario, and as the result of their efforts "The Sir Casimir Gzowski Memorial Centennial Committee" was formed in June 1966.

The Committee was organized under the honorary patronage of:
Hon. W. Earl Rowe — Lieutenant-Governor of Ontario
Hon. John P. Robarts — Prime Minister of Ontario
W. R. Allen — Chairman of the Council of Metropolitan Toronto and Z. Jaworski — Past President of Canadian-Polish Congress.

Philip Givens, the Mayor of the City of Toronto at that time, has agreed to chair the Committee.

Dr. Z. Przygoda, became the Executive vice-chairman, and alderman Horace Brown and Ben Grys accepted vice-chairmanship.

Gen. G. G. Simonds and P. C. Anderson M.E.I.C. became Committee members. Mr. G. M. Bornet P. Eng. and Mr. S. Kruk were elected respectively secretary and treasurer.

The militia garrison in Toronto delegated to the Committee Capt. M. R. Norman.

Mr. C. S. Gzowski, the great grandson of Sir Casimir, represented the Family on the Committee.

The Committee hoped that the project will inspire the interest of all Canadians proud of the great traditions of their country. This was the opportunity to beautify the City and at the same time perpetuate the memory of one of Canada's great pioneers. It was fitting, that the man who did so much for Canada one hundred years ago, should be honoured during Canada's Centennial Celebration.

The financial campaign started. All in all more than 1800 donations of materials, equipment, labor and money came in from all parts of Canada to build the Sir Casimir Gzowski Monument — the $43,000 project.

The design of the memorial was executed by Richard D'wonnik, M.R.A.I.C. and symbolizes Sir Casimir's contribution to Canada as an engineer, soldier and citizen. Situated in Gzowski Park on the Toronto waterfront, it stands out on the Western approaches of the City. Mementos of Sir Casimir's life are displayed inside three corners of the structure and a bronze bust of Gzowski forms the centrepiece of the memorial.

General contractor on the project was Mr. Rolland Nicholls, the president of Milne & Nicholls, General Contractors in Toronto, who volunteered to build the memorial at cost plus a fee of one dollar. Thanks to him the Committee was able to begin the construction.

On Saturday afternoon, May 25th, 1968 at ceremonies attended by 5,000 persons, the Prime Minister of Canada Rt. Hon. Pierre Elliott Trudeau unveiled the memorial. The Ontario Provincial Government was represented by Hon. John Jaremko, Minister of Welfare, — City of Toronto by Mayor William Dennison, the Canadian Polish Congress by Z. Jarmicki, the National President.

The engineering profession was represented by the executive officers of the Association of Professional Engineers of the Province of Ontario, the representatives of the Engineering Institute of Canada and the members of the Association of Polish Engineers in Canada who assembled at this memorable day in Toronto for their XXVIII Annual Convention.

They all were there to pay their tribute to the memory of an engineer, who rose to the head of his profession, was one of the founders of the Canadian Society of Civil Engineers and three times elected its President.

The guard of honour from Queen's Own Rifles accompanied by the band of the Royal Regiment of Canada represented the Canadian Armed Forces paying their respect to a soldier, who was keenly concerned over the defence of Canada, fought for the strengthening of the Canadian militia and served in it as Colonel.

And there were the citizens of Toronto, the Canadians of all ethnic origins, who together with the Prime Minister of Canada paid their homage to a Pole, who became a great Canadian and set for all of us a shining example of civic virtues.

* * *

After the ceremony, at the reception held in the officers mess of the Royal Regiment of Canada in Fort York, Mr. M. Lewandowski, representing the Polish Government in Exile, invested with the high Polish decorations the members of the Gzowski Committee.

Gen. G. G. Simonds received the Insygnia of the Commander of the Order Polonia Restituta.

The late Col. A. K. Vincent, who was acting secretary of the Committee received the Officers' Cross of the Order Polonia Restituta.

Dr. Z. Przygoda, the iniciator of the Gzowski Memorial received the Knights' Cross of the Order Polonia Restituta.

Former Mayor Philips Givens, Richard D'wonnik, architect, Alderman Horace Brown and Ben Grys all received the Golden Cross of Merit.

TO A CANADIAN

by

Horace Brown

How does a man build his country?
Some do it with words; others with deeds.
Casimir Gzowski was a doer.
He was a founder, creator, striver,
Inspiring in others his own love of his adopted land.

How can a name like Gzowski be Canadian?
Fleeing his native Poland to escape tyranny,
He found in Canada the liberty he craved.
Nurtured in freedom, his large store of enterprise
Poured forth for Canada railroads and stock exchanges,
Racetracks and religious colleges, institutes for engineers,
Militia regiments and a fierce pride of country
So consuming his Queen dubbed him knight
And bade him rise and stand tall in the land.

So a man named Gzowski can be the most Canadian of Canadians.
He can give the lie to prejudice and intolerance
By the very example of his soaring spirit,
Even as his bridge laid its steel rainbow across Niagara.
His mark is fixed on Canada so firmly history now claims him.
His deeds are sagas of adventure of mind and heart.

This day we place his memory among our nation's treasures,
There to hold it in the high esteem due one of Canada's greatest sons.
Sir Knight, your valiant heart reaches across the years
To teach us once again that Gzowski is, indeed, a most Canadian name.

Presented by
Alderman Horace Brown,
Vice-Chairman,
Sir Casimir Gzowski Memorial Centennial Committee,
at the unveiling of the Memorial
in Sir Casimir Gzowski Park, Toronto,
by the Prime Minister of Canada,
May 25, 1968.

As the matter of curiosity we reprint the Obituary of Sir Casimir Gzowski, which appeared in the TRANSACTIONS of the Canadian Society of Civil Engineers, Vol. XIII, 1899.

OBITUARY

Sir Casimir Stanislaus Gzowski, K.C.M.G., Honorary A.D.C. to the Queen, died at his residence, "The Hall", 279 Bathurst Street, Toronto, on the 24th August, 1898, at the age of eighty-five. He was born at St. Petersburg on the 5th March, 1813, and was the son of Stanislaus, Count Gzowski, a Polish nobleman, and officer in the Imperial Guard. Sir Casimir was intended for a military career, and, at the early age of nine years, was placed in the Military College at Kremenetz, where he remained for eight years, and in 1830 obtained a commission in the Imperial Russian Engineers. Three years later, however, owing to the part which, with other officer of the same nationality, he had taken in the Polish insurrection of 1830-31, he was, after having been confined in a military prison for some months, shipped to the United States. With his fellow-exiles he landed in New York in the summer of 1833, without friends or money.

His career in this country was rendered more difficult by the fact that he was, on his arrival in America, entirely ignorant of the English language. With characteristic energy, however, he immediately set to work to overcome this difficulty, and, while engaged in the study of English, obtained his livelihood by teaching German, French and Italian, and by giving lessons in drawing and fencing. In order to perfect himself in that knowledge of the English language which he knew to be essential to his success as an engineer, he articled himself as a student in law to Mr. Parker Hall, of Pittsfield, Massachusetts. At the end of three years he passed all the required legal examinations, and in 1837, having become a citizen of the United States, he was admitted to the bar and practised as an advocate in Pennsylvania until 1841. In this year he abandoned the practice of law, and, moving to Toronto, Canada, obtained through the friendship of Sir Charles Bagot a position in the Department of Public Works. For six years thereafter he was Superintending Engineer of Roads and Harbours in Western Ontario. In 1846 he became a naturalized British subject, and, having left the service of the Government, acted for some time as Superintending Engineer for the Upper Canada Mining Company. From 1850 to 1853 Sir Casimir was Engineer of the Harbour Works at Montreal, and, at the same time, was consulting engineer on the ship canal improvements between Montreal and Quebec. He next turned his attention to railway construction, and became Chief engineer of what is now the main line of the Grand Trunk Railway between Montreal and Island Pond, but was then called the St. Lawrence and Atlantic Railway. Resigning this position, he entered into partnership with Sir Alexander Galt, the Hon. H. Holton and Sir David Macpherson for the construction of the Grand Trunk main line from Toronto to Sarnia. This contract proved to be a profitable one financially, and it was upon it that the basis of Sir Casimir's fortune was laid. On the completion of the work, Sir Alexander Galt and Mr. Holton withdrew from the firm, and the two remaining partners continued operations as railway contractors, and carried out amongst other large contracts, the construction of the lines between Port Huron and Detroit, and London and St. Mary's. The firm of Gzowski and Macpherson also successfully completed the construction of the International Bridge across the Niagara River near Buffalo in 1873. The cost of this work was $1,500,000. Subsequent to 1873, Mr. Gzowski practised on his own account, and was largely consulted by the Dominion Government with reference to railways and harbours, having, amongst other works, been called upon to report on the enlargement of the Welland Canal and Baie Verte Canal.

"He was also interested in military matters, and took an active part in forming the Rifle Association of Ontario. He acted as President of the Dominion Rifle Association, and was instrumental in sending the first Canadian team to Wimbledon. In 1873 he was appointed Lieutenant-Colonel of the Central Division of Volunteers in

Toronto, and six years later was promoted to the rank of Colonel, and was gazetted an honorary A.D.C. to the Queen. In recognition of valuable services rendered to the Dominion of Canada, he was created a Knight Commander of the Order of St. Michael and St. George in 1890. He held office in 1896 as Administrator of the Government of Ontario".

Throughout his busy life Sir Casimir took a deep interest in everything that tended to the uplifting and improving of his fellow-citizens. In this connection it may be incidentally mentioned that he was Chairman of the Niagara Falls Park Commission, and that, as a recognition of his services in this direction, a fine bronze bust of him has been placed in the Queen Victoria Park near Table Rock.

He was one of the founders of the Canadian Society of Civil Engineers, and held the office of President during three successive years, 1889, 1890 and 1891. During his presidential term he endowed the well-known "Gzowski" medal for the best original paper read before the Society. Sir Casimir was deeply interested in the well-being of the Society, and aided it not only by his wise advice and encouragement, but also by liberal contributions towards its funds.

He married, in 1839, Maria, daughter of Dr. Beebe, of Erie, Pennsylvania, an eminent American physician.

NEWS REVIEW

SOLINA DAM LARGEST TO BE BUILT IN POLAND

by Stefan Szuszkiewicz, M.Sc.

THE construction of a dam and power plant at Solina was the first phase in the plan for regulation and control of water resources in the Carpathian Mountains. The complex development plan for the San River Basin envisages the construction of 16 dams, with Solina being the second and largest dam to be constructed in the San System as well as in Poland.

The main functions of the Solina Reservoir are:

—flood control by the storage of the huge flood waves of the Upper San.

—the utilization of water head created by the reservoir for the production of peak hydro-electric power.

—an overall development and economic reorganization of the Bieszczady region, together with the implementation of an extensive programme providing facilities for tourism and recreation.

Geology: The dam and the reservoir are situated in the area of the Central Carpathian Depression which has a complex geological structure with angles of declination varying from 50 deg to 90 deg.

The foundations rocks are: 1. Middle-Krosno layers formed as (a) shale-sandstone series, (b) thick-plated sandstone; 2. Lower Krosno layers in a form of sandstone-shale series.

The rocks layers are parallel to the dam axis and slope towards the direction of the tailrace water. The Solina Project can be described as follows:

Dam: following the technical and economic analysis of five designs for the dam, the gravity concrete dam with widened expansion joints was chosen as the most favourable solution. The dam is divided into 43 sections and the total volume of concrete used for the dam construction amounts to 780,300 yd^3. The width of a typical dam section is 15 m. The dam is of a triangular section, with upstream and downstream faces inclined at 1:0.5 and 1:0.75 respectively. The crest width is 8.4 m. Due to the widened expansion joints in the dam sections, the total dam volume was reduced by about 80 per cent, the uplift forces were also considerably reduced, and therefore more favourable thermic conditions in the dam concrete could be obtained.

The dam is provided with four control galleries, located at about 20 m one above the other. The lowest gallery, which is used for grouting works, is located at 4-6 m above the foundation rock. This gallery evacuates all water from the vertical drainage systems and the foundations drainage systems, enabling partial completion of the grouting curtain.

The dam has three overflow sections situated in the original river channel. The spillways are provided with welded steel tainter gates, which are designed with 0.5 free-board above the normal pool level. The side overflow sections are also provided with bottom outlet works, with discharge capacity of 160 m^3/sec each (V=33 m/sec). A precast reinforced concrete bridge passes over the dam spillways.

The dam has four power plant sections with steel penstocks to direct water through the turbines. The penstocks are of 6.0 m and 4.0 m dia to accommodate Francis and reversible turbines respectively. The concrete surrounding the penstocks is reinforced circularly. Penstock inlet sills are elevated 27.0 m above the bottom of the original-river channel.

To protect the dam against seepage of water from the reservoir and to reduce the dam uplift forces, the foundation rocks were sealed with cement grouting. The dam design envisaged 140 grouting holes of total length 20,000 m to be drilled in three rows across the dam length of 700 m.

Power plant: The peak power plant with a pumping unit was chosen as the most favourable means of producing power and will be situated on the left bank of the river. It ensures a capacity of 120 MW with the annual production of 112 GWh to be generated in one or two peaks, depending on the system demand. The pumping unit will ensure continuous power production irrespective of the natural river flows.

There are two generating units driven by type 'F-30' Francis turbines and two additional units driven by type RF-70' reversible turbines made in Czechoslovakia. The powerhouse, 30.55 by 87.75 m in plan and 15 m in height, is a steel structure with walls of brick or precast concrete units, divided into separate sections housing an assembly yard, the Francis units and the reversible units. The power plant is also provided with an outdoor 110 kV. switchyard. The total volume of concrete used in the power plant amounts to 40,764 m^3.

The individual sections of the power plant are built on the thick-plated sandstone, with only the end parts of the draft tubes extending into the shale-sandstone series.

Reservoir: Because of the pumping unit, the Solina Powet Plant, in addition to its upper reservoir created by the dam also has the lower reservoir at Myszkowce which was completed in 1962. Its usable storage capacity of 5.4 million m^3 is sufficient for pumping water to the upper reservoir during the periods of lowest power demand. At the normal pool level, the upper Solina Reservoir has a total storage capacity of 474 million m^3.

The reservoir water levels will vary between 12-15 m, and the daily changes will not exceed 0.15-0.20 m. The flood control storage capacity is 82 million m^3.

Completion of the dam and commission of the power plant is scheduled for November 1968.

(International Construction)
Sept. 1968

PROFESSIONAL JOB OPENINGS TURN UP

Job openings for engineers, scientists and other professionals climbed above last year's low levels during the first half of 1968, according to the Technical Service Council. The TSC is a non-profit, industry,sponsored placement service which operates from coast-to-coast.

The number of new positions reported by 1,300 employers increased 16% during the first six months of 1968, compared to last year. However, total professional job vacancies are still sharply below the peak levels of December 1964.

The main increases have been for experienced engineers and accountants. Experienced sales engineers, cost accountants, personnel managers, industrial engineers, computer programmers, project engineers and material controllers are in short supply. Employers report difficulty finding experienced plant managers and sales managers. Opportunities in the chemical process, construction, steel and consulting engineering fields are still restricted. Some consulting firms which have had lay-offs have started to re-hire.

Western Canadian firms reported the greatest increase in vacancies. Increases of 7% to 9% were noted in Ontario, Quebec and the Maritimes.

Opportunities for university graduates with no experience are down from previous years. Arts graduates particularly report difficulty securing positions. Most current openings require specific experience in some field or industry. Because many employers prefer to promote from within, jobs are most numerous at starting salaries under $12,000. Openings for executives listed with the TSC's offices in Toronto, Montreal and Calgary pay up to $30,000 per year.

In the 1920's, up to one-third of the graduating classes in engineering and science were emigrating to the United States. The Technical Service Council was set up by educators and industrialists to retain such men for Canada. As a practical means of doing this, it operates a coast-to-cast placement service which has found jobs for over 10,000 men and women. It is the oldest and largest Canadian placement service and the only one sponsored by industry. Through offices in Toronto, Montreal and Calgary, TSC places men from coast-to-coast. An executive division specializes in over-$15,000 jobs. No charge is made to job hunters.

(The Professional Engineer & Engineering Digest — Sept. 1968)

COMPUTERS TAKING PLACE OF P. ENGS. SAYS BELLE EXEC.

Predictions that the increasing use of computers will reduce the telephone industry's need for professional engineers in the next ten years, were voiced today by W.J.B. Hutchinson, Bell Canada's Director of Engineering Administration.

In a paper presented at the annual meeting of the Telephone Association of Canada, Mr. Hutchinson recommended that the number of engineers hired today should be an "absolute minimum", on the basis that the use of the computer will, by 1975, reduce the engineering effort required and speed up decision-making.

At the same time, he predicted that technologists will assume much of the work now being done by engineers.

"The volume of knowledge and breadth of subjects taught today in schools, institutes and universities is increasing at a rapid rate," he said. "The complexity of many of our engineering jobs is increasing at a slower pace, and with the expanding use of computers, it is believed that work considered to require professional engineers today will, in ten years' time, require no higher level of technical skills and abilities than the technologist.

"This is precisely what is happening today, compared to our situation ten years ago," he continued. "The increasing competence of the technologist is displacing the older engineer in industry who has not kept updated, and now finds himself on the same plateau of technical knowledge as the technologist."

Mr. Hutchinson also noted that new engineers entering the industry may be confronted with a choice of roles—either as an engineering manager or as a technical specialist.

"It is my belief that if we say we need engineers, then we must have an engineering job for them to do," he said. "While engineering grads may not be placed on these work assignments for the first few years, it is essential they be challenged early with assignments so that we may better judge their future abilities in the technical and managerial fields."

He pointed out that Bell Canada is considering modifying its Regional Engineering School training program at Queen's University to include such subjects as managing the technical job, "which certainly is a growing problem of importance".

He challenged the industry to pay closer attention to the needs of the individual when company-sponsored training is scheduled, and urged that separate salary plans be developed for engineers to make salaries in the industry comparable to those outside. Such a plan has been adopted by Bell Canada.

(The Professional Engineer & Engineering Digest — Sept. 1968)

NEWS OF MEMBERS

GEORGE M. BORNET

George M. Bornet, associate director of Technical Research, International Institute for Cotton, Manchester, England, was granted the Award of Merit by the American Society for Testing and Materials, Philadelphia, Pa. The Award was conferred on Bornet by the Society's President Francis J. Mardulier and Executive Secretary Thomas A. Marshall, Jr. on May 31, 1968 at an ASTM meeting in Zurich, Switzerland.

ASTM is an international, nonprofit, technical, scientific, and educational society concerned with research and standards for products and for materials of every type. It is the largest developer of nationally used voluntary standards — both industrial and consumer — in the United States.

Established by ASTM nineteen years ago, the Award of Merit is given to recognize individuals who have rendered distinguished service to the Society. Bornet received the award "for his productive service to ASTM technical activities, especially for his untiring contributions in developing and writing textile test methods, his thorough and articulate manner of presenting his views on many problems in an interesting, intelligent and convincing manner."

A native of Cracow, Poland, and a naturalized Canadian citizen, Bornet received his B.Sc. Tech. degree with First Class Honors in textile technology in 1948 and his M.Sc. degree in 1965 from the University of Manchester (England).

He was a technical assistant at the Canadian Celanese Ltd. in Sorel, P.Q., Canada from 1948-51 and was a research engineer with the Ontario Research Foundation, Toronto, Canada from 1951-67. He assumed his present position in 1967.

Prior to 1967 he did research on short and long-term unevenness of all types of yarns and carried out three major international surveys of yarns to establish prevailing levels of unevenness.

In his present capacity he has been concerned with the organization of sponsorship of cotton research in Europe, supported by the International Institute for Cotton.

He is a member of ASTM and since 1955 has served on Technical Committee D-13 on Textile Materials, is a member of a number of its subcommittees, vice-chairman of the Papers Subcommittee, and secretary of the Editorial Review and Policy Subcommittee.

In addition to ASTM, he is a member of the American Society for Quality Control, Textile Society of Canada, Association of Professional Engineers of Ontario (Canada), Association of Polish Engineers in Canada, and a Fellow of The Textile Institute (England).

He has served on Technical Committee 38 on Textile Materials of the International Organization for Standardization (ISO) and was the Canadian representative in ISO Working Groups on the Tex Yarn Numbering System and on Yarn Unevenness. He was the Canadian delegate at four of the ISO/TC38 meetings.

Bornet received the Best Paper Award in 1963 and in 1966 for publications in the annual Journal of the Textile Division of the American Society for Quality Control. **(ASTM News)**

ZYGMUNT JERZY JAWORSKI

Mr. Z. J. Jaworski, a distinguished member of the Association of Polish Engineers in Canada retired last year from Ontario Hydro after 18 years of service.

Mr. Jaworski was born in 1902 in Charbin, China. He began his formal education in Poland, then under Russian domination. After the outbreak of the First World War, he continued his education at the Military College in Odessa, Russia, and **following** the evacuation of the College to Serajewo, Jugoslavia where he graduated in 1920. Upon his return to independent Poland in 1920, he took part in Russo-Polish War as a volunteer of the Polish Army.

After the war he commenced his academic studies at the University of Warsaw (Mathematics) and continued at the Warsaw Technical University (Electrical Engineering). After graduation as Electrical Engineer in 1935, he worked for the Polish Aeronautical Institute in Warsaw, where before the outbreak of the World War II, he held the position of the Chief Engineer of the Aircraft Electronic Dept. Called to the Polish Air Forces in 1939, he took part in the campaign in Poland and with the Polish Army went into exile.

He came to Canada with a group of Polish engineers and scientists, who were evacuated to Canada from France. He started his professional career in this country with Blocktube Controls of Canada, where he worked as a Research Engineer. This employment terminated at the end of the war in 1945, whence Mr. Jaworski decided to stay in Canada.

In 1946 he was employed by Quebec Hudro-Electric Commission in Montreal as a Design Engineer. In 1949 he moved to Toronto and accepted the position of the Design Engineer with the Hydro-Electric Power Commission of Ontario and was later promoted to the position of Project Design Engineer, Station Design Dept.

He retired in May 1967.

Mr. Jaworski is well known in the Polish-Canadian Community. He held a number of prominent positions in the Polish ethnic group and his service contributed to a better understanding among all Canadians. In 1957 and 1958 he was Chairman of the Toronto District of the Canadian-Polish Congress and from 1959 to 1965 was National President of the Canadian-Polish Congress. The illness at the end of 1965 interrupted this dedicated service to his fellow Polish-Canadians. For his distinguished contributions to the Polish ethnic group, the delegates to the Twentieth Convention of the Canadian-Polish Congress in Edmonton, elected him honorary National President.

Mr. Jaworski also took active part in the Association of Polish Engineers in Canada and in 1956 was Chairman of the Toronto Branch.

He is a member of the Association of Professional Engineers of the Province of Ontario.

JERZY WŁADYSŁAW MEIER

The American Society for Testing and Materials at its annual meeting held last June in San Francisco presented the Award of Merit to J. W. Meier, D. Eng. Sc., principal metallurgist, Physical Metallurgy Div., Department of Energy, Mines and Resources. He received the award "for his technical contribution in the field of nonferrous metals, and for coordination of standardization activities between the United States and Canada, and in the field of international standardization". Mr. Meier, who is well known for his papers on various aspects of alloying, properties and uses of nonferrous metals, received the Research Award from the Government of Canada in 1963.

(Design Engineering — July 1968)

TADEUSZ TWORKOWSKI

Mr. Tadeusz Tworkowski, recently retired from Ontario Hydro after 24 years of service, was born in Odessa in 1903. He studied at Warsaw Technical University, graduating as an Electrical Engineer in 1930. His early professional experience embraced many fields of electrical engineering, such as telecommunication, power plants, transmission lines and transformer stations. His career in Poland was interrupted by the war in 1939.

He came to Canada in 1942 with other Polish engineers, who were evacuated to Canada from France. He commenced his career in this country as Design Electrical Draftsman with L'Air Liquide Society in Montreal and R. Melville Smith Co. Ltd., Fort St. John, B.C. (Alaska Highway).

In February 1944 Mr. Tworkowski was employed by Ontario Hydro as Design Electrical Draftsman and later promoted to the position of Assistant Project Engineer, Generation Dept. He was Resident Electrical Engineer at Chenaux Development and in 1955 was appointed Project Design Engineer Station Design Dept. In this capacity he was responsible for design and coordination of electrical design for hydraulic generating stations.

naszych oszczędności i sum ubezpieczeniowych na życie.

W związku z ankietą, którą otrzymali członkowie STP od Polskiej Akademii Nauk wyjaśniono, że STP udzieliło pomocy prof. Chojnowskiemu w jego badaniach psychometrycznych, jako prywatnej jednostce.

W związku z tym kol. Krajewski złożył oświadczenie, że podzielając obawy, że kontakty z Naczelną Radą Techniczną w Polsce mogłyby zaszkodzić naszym Kolegom w Kanadzie uważa, że mimo trudności politycznych, w związku z tradycyjnym charakterem naszego Stowarzyszenia, kontakty te winniśmy w rozsądny sposób utrzymać.

Jednogłośną uchwałą przez powstanie zostało przyznane kol. Rościszewskiemu członkostwo honorowe Stowarzyszenia. (Życiorys kol. Rościszewskiego jest w niniejszym numerze na innym miejscu).

Ponadto Walny Zjazd uchwalił przez aklamację podziękowania dla dwu członków Stowarzyszenia, którzy "dobrze się zasłużyli Stowarzyszeniu". Są nimi: kol. E. Baranowski, który pomyślnie przeprowadził akcję ufundowania pomnika Mikołaja Kopernika w Montrealu, oraz kol. Z. Przygoda, który zainicjował i doprowadził do skutku wybudowanie "Sir Casimir Gzowski Memorial" w Toronto.

W sprawie wniosku, zamienionego po dyskusji na dezyderat, by zmienić nazwę Stowarzyszenia na "Stowarzyszenie Inżynierów i Techników Polskich w Kanadzie" zgłoszono zastrzeżenie, że zmiana nazwy, a w konsekwencji zmiana statutu może pociągnąć za sobą trudności w "The Engineering Institute of Canada", który w podobnych wypadkach prowadzi akcje prawne zmierzające do usunięcia słowa "Engineering" z nazw jakichkolwiek innych organizacji. — Zarząd Główny ma szczegółowo rozpatrzeć zgłoszony dezyderat.

Wysunięty został dezyderat, aby Zarząd Główny zainicjował lub pomógł w zorganizowaniu oddziału STP na Zachodzie, w Vancouver.

Dwa wnioski w sprawie stworzenia Funduszu Stypendialnego STP dla młodzieży polskiej zostały po wyczerpującej dyskusji za zgodą wnioskodawcy przekazane jako dezyderaty do Zarządu Głównego celem ich rozpatrzenia.

Zgłoszono dezyderat o ustanowienie oficjalnego łącznika pomiędzy STP a "Association of Professional Engineers of the Province of Ontario".

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Zjazd wykazał już po raz niewiadomo który, że pozycja naszego Stowarzyszenia w społeczeństwie kanadyjskim jest znacznie lepsza, niż nam się wydaje. Trzeba, byśmy do niej dorośli i na wewnątrz Stowarzyszenia.

Obrady cechowała rzeczowość i powaga, dzięki czemu Zjazd, mimo znacznego materiału, trwał niespełna trzy godziny.

Po południu uczestnicy Zjazdu wzięli udział w odsłonięciu pomnika Kazimierza Gzowskiego.

S. T. MATULA
Przewodniczący Zjazdu

ZARZĄD GŁÓWNY

Prezes Zarządu Głównego kol. S. T. Orłowski otrzymał od Członka Honorowego STP kol. A. Rościszewskiego następujący list:

Wielce Szanowny Kolego Prezesie,

Uchwała Walnego Zjazdu z dnia 25 maja br. w mojej sprawie była dla mnie miłą niespodzianką i jakby pożegnalnym słowem na zakończenie wieloletniej pracy technicznej.

Członkostwo Honorowe Stowarzyszenia jest nielada wyróżnieniem, które będę sobie cenił bardzo wysoko.

Przyjmując tę zaszczytną godność składam na ręce Szanownego Kolegi gorące podziękowania z prośbą aby jako Prezes Stowarzyszenia zechciał zapewnić wszystkich Kolegów, że sprawili mi swoją decyzją wiele zadowolenia i przyjemności.

Łącze wyrazy szacunku i serdeczne pozdrowienia.

(—) Antoni Rościszewski

Santa Barbara, Cal.
17 czerwca 1968

ODDZIAŁ MONTREAL

● Walne zebranie Oddziału Montreal odbyło się dnia 23 kwietnia br. Zebranie udzieliło absolutorium ustępującemu Zarządowi i wybrało nowy Zarząd Oddziału w składzie:
Przewodniczący — Kol. K. Milej
Vice-przewodniczący — Kol. K. Liebert
Sekretarz — Kol. K. Stys
Skarbnik — Kol. H. Fabiszewski
Członkowie — Kol. W. Marynowski, S. Matula, S. Ziółkowski, T. Tomaszewski.

● Zarząd Oddziału postanowił zorganizować Fundusz Stypendialny Oddziału Montreal STP, i upoważnił kol. T. Tomaszewskiego do prowadzenia zbiórki pieniężnej. Zarząd proponuje ufundowanie stypendium dla osoby polskiego pochodzenia studiującej na wydziale inżynieryjnym lub matematyczno-przyrodniczym.

ODDZIAŁ OTTAWA

● Walne zebranie Oddziału Ottawa odbyło się dnia 28 kwietnia br. Zebranie udzieliło ustępującemu Zarządowi absolutorium i wybrało nowe władze Oddziału w składzie:
Przewodniczący — Kol. A. M. Garlicki
Viśe-przewodniczący — Kol. R. Gapski
Sekretarz — Koleż. J. Bieniada
Skarbnik — Kol. A. Cwalina
Członkowie — Kol. A. Miszkiel, M. Trojanowski.

● Wydział Nauk Technicznych, Polskiego Uniwersytetu na Obczyźnie (PUNO) w Londynie nadał stopień Doktora Nauk Technicznych dwom członkom Oddziału Ottawa.

Kol. Jerzy Władysław Meier otrzymał stopień Doktora Nauk Technicznych w roku 1967 z zakresu metalurgii na podstawie pracy p.t. "Research in High Strength Alloy Casting", ocenionej przez dr. J. Convey'a, dr. R. L. Cunningham'a i prof. dr. W. J. Wrażeja. Promotorem był prof. Wrażej.

Kol. Henryk Urban Wiśniowski otrzymał stopień Doktora Nauk Technicznych w roku 1967 z zakresu technologii paliw na podstawie pracy pt. "Investigation of Crude Oils as Fuels for Locomotive Diesel Engines" ocenionej przez dr. J. Convey'a, prof. dr. D. A. Millar'a i prof. dr. W. J. Wrażeja. Promotorem był prof. Wrażej.

ODDZIAŁ SARNIA

● Walne zebranie Oddziału Zagłębie Chemiczne odbyło się dnia 19 kwietnia br. Zebranie udzieliło ustępującemu Zarządowi absolutorium z podziękowaniem i wybrało nowe władze Oddziału w składzie:
Przewodniczący — Kol. C. Kuley
Vice-przewodniczący — Kol. B. Wiechuła
Sekretarz — Kol. K. Paździora
Skarbnik — Kol. J. Firko
Członek Zarządu — Kol. J. Lewandowski.

ODDZIAŁ TORONTO

● Rada A.P.E.O. zatwierdziła członków Oddziału Toronto STP do następujących komisji:

Kolegów: L. W. Skonieczego i J. Więckowskiego do ADMISSION STANDARDS COMMITTEE.

Kol. Z. Przygodę do CONSULTING PRACTICE COMMITTEE oraz do INTERVIEWING COMMITTEE.

W INTERVIEWING COMMITTEE zasiadać będzie również kol. W. A. Wyszkowski, długoletni członek tej komisji.

● W czasie wakacji Zarząd Oddziału nawiązał serdeczny kontakt ze Stowarzyszeniem Inżynierów Węgierskich w Kanadzie. Inżynierowie Węgrzy są dobrze zorganizowani, liczniejsi od nas i mają wśród swoich członków inne wolne zawody jako "sustaining members".

NOWI CZŁONKOWIE

W okresie od dnia 15 marca do dnia 15 września 1968 r. zostali przyjęci do Stowarzyszenia następujący Koledzy i Koleżanki:

Oddział Montreal:
Kol. Louis Obidniak
Koleż. Halina Rosińska
Kol. Witold Siwik
Adam Szkorla
Maciej Znojkowski.

Oddział Toronto:
Kol. Marian Mańkowski
Risto Niczowski
Kazimierz Rudak
Richard Sztenc.

naszych oszczędności i sum ubezpieczeniowych na życie.

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Zjazd wykazał już po raz niewiadomo który, że pozycja naszego Stowarzyszenia w społeczeństwie kanadyjskim jest znacznie lepsza, niż nam się wydaje. Trzeba, byśmy do niej dorośli i na wewnątrz Stowarzyszenia.

Obrady cechowała rzeczowość i powaga, dzięki czemu Zjazd, mimo znacznego materiału, trwał niespełna trzy godziny.

Po południu uczestnicy Zjazdu wzięli udział w odsłonięciu pomnika Kazimierza Gzowskiego.

S. T. MATULA
Przewodniczący Zjazdu

ZARZĄD GŁÓWNY

Prezes Zarządu Głównego kol. S. T. Orłowski otrzymał od Członka Honorowego STP kol. A. Rościszewskiego następujący list:

Wielce Szanowny Kolego Prezesie,

Uchwała Walnego Zjazdu z dnia 25 maja br. w mojej sprawie była dla mnie miłą niespodzianką i jakby pożegnalnym słowem na zakończenie wieloletniej pracy technicznej.

Członkostwo Honorowe Stowarzyszenia jest nielada wyróżnieniem, które będę sobie cenił bardzo wysoko.

Przyjmując tę zaszczytną godność składam na ręce Szanownego Kolegi gorące podziękowania z prośbą aby jako Prezes Stowarzyszenia zechciał zapewnić wszystkich Kolegów, że sprawili mi swoją decyzją wiele zadowolenia i przyjemności.

Łącze wyrazy szacunku i serdeczne pozdrowienia.

(—) Antoni Rościszewski

Santa Barbara, Cal.
17 czerwca 1968

ODDZIAŁ MONTREAL

● Walne zebranie Oddziału Montreal odbyło się dnia 23 kwietnia br. Zebranie udzieliło absolutorium ustępującemu Zarządowi i wybrało nowy Zarząd Oddziału w składzie:
Przewodniczący — Kol. K. Milej
Vice-przewodniczący — Kol. K. Liebert
Sekretarz — Kol. K. Stys
Skarbnik — Kol. H. Fabiszewski
Członkowie — Kol. W. Marynowski, S. Matula, S. Ziółkowski, T. Tomaszewski.

● Zarząd Oddziału postanowił zorganizować Fundusz Stypendialny Oddziału Montreal STP, i upoważnił kol. T. Tomaszewskiego do prowadzenia zbiórki pieniężnej. Zarząd proponuje ufundowanie stypendium dla osoby polskiego pochodzenia studiującej na wydziale inżynieryjnym lub matematyczno-przyrodniczym.

ODDZIAŁ OTTAWA

● Walne zebranie Oddziału Ottawa odbyło się dnia 28 kwietnia br. Zebranie udzieliło ustępującemu Zarządowi absolutorium i wybrało nowe władze Oddziału w składzie:
Przewodniczący — Kol. A. M. Garlicki
Viśe-przewodniczący — Kol. R. Gapski
Sekretarz — Koleż. J. Bieniada
Skarbnik — Kol. A. Cwalina
Członkowie — Kol. A. Miszkiel, M. Trojanowski.

● Wydział Nauk Technicznych, Polskiego Uniwersytetu na Obczyźnie (PUNO) w Londynie nadał stopień Doktora Nauk Technicznych dwom członkom Oddziału Ottawa.

Kol. Jerzy Władysław Meier otrzymał stopień Doktora Nauk Technicznych w roku 1967 z zakresu metalurgii na podstawie pracy p.t. "Research in High Strength Alloy Casting", ocenionej przez dr. J. Convey'a, dr. R. L. Cunningham'a i prof. dr. W. J. Wrażeja. Promotorem był prof. Wrażej.

Kol. Henryk Urban Wiśniowski otrzymał stopień Doktora Nauk Technicznych w roku 1967 z zakresu technologii paliw na podstawie pracy pt. "Investigation of Crude Oils as Fuels for Locomotive Diesel Engines" ocenionej przez dr. J. Convey'a, prof. dr. D. A. Millar'a i prof. dr. W. J. Wrażeja. Promotorem był prof. Wrażej.

ODDZIAŁ SARNIA

● Walne zebranie Oddziału Zagłębie Chemiczne odbyło się dnia 19 kwietnia br. Zebranie udzieliło ustępującemu Zarządowi absolutorium z podziękowaniem i wybrało nowe władze Oddziału w składzie:
Przewodniczący — Kol. C. Kuley
Vice-przewodniczący — Kol. B. Wiechuła
Sekretarz — Kol. K. Paździora
Skarbnik — Kol. J. Firko
Członek Zarządu — Kol. J. Lewandowski.

ODDZIAŁ TORONTO

● Rada A.P.E.O. zatwierdziła członków Oddziału Toronto STP do następujących komisji:

Kolegów: L. W. Skonieczego i J. Więckowskiego do ADMISSION STANDARDS COMMITTEE.

Kol. Z. Przygodę do CONSULTING PRACTICE COMMITTEE oraz do INTERVIEWING COMMITTEE.

W INTERVIEWING COMMITTEE zasiadać będzie również kol. W. A. Wyszkowski, długoletni członek tej komisji.

● W czasie wakacji Zarząd Oddziału nawiązał serdeczny kontakt ze Stowarzyszeniem Inżynierów Węgierskich w Kanadzie. Inżynierowie Węgrzy są dobrze zorganizowani, liczniejsi od nas i mają wśród swoich członków inne wolne zawody jako "sustaining members".

NOWI CZŁONKOWIE

W okresie od dnia 15 marca do dnia 15 września 1968 r. zostali przyjęci do Stowarzyszenia następujący Koledzy i Koleżanki:

Oddział Montreal:
Kol. Louis Obidniak
Koleż. Halina Rosińska
Kol. Witold Siwik
Adam Szkorla
Maciej Znojkowski.

Oddział Toronto:
Kol. Marian Mańkowski
Risto Niczowski
Kazimierz Rudak
Richard Sztenc.

N O W E K S I Ą Ż K I

Zbigniew Kączkowski: Płyty, Wyd. Arkady, Warszawa, 1968.

Praca zawiera podstawowe równania teorii sprężystości, podstawy klasycznej teorii płyt cienkich izotropowych, uogólnienia i uściślenia klasycznej teorii płyt, podstawy teorii płyt anizotropowych i niejednorodnych, metody rozwiązywania równań różniczkowych teorii płyt. Uwzględniono również wpływ temperatury, sprężystego podłoża, sił poprzecznych na odkształcenia płyt oraz teorię płyt cienkich o dużych ugięciach.

Obszernie ujęto dorobek ostatniego 30-lecia w dziedzinie płyt anizotropowych i niejednorodnych. Z różnych metod rozwiązywania płyt podano najczęściej stosowane metody klasyczne oraz nowe będące dorobkiem własnym autora.

Przedmiotem rozważań tej książki są w zasadzie płyty, zagadnieniom tarczy poświęcono jednak również nieco uwagi (rozdziały 3.3, 4.7 i 5.4).

Przykłady liczbowe, tablice i skorowidz rzeczowy, umieszczony na końcu książki, ułatwią czytelnikowi rozwiązywanie konkretnych zagadnień.

Książka przeznaczona jest dla inżynierów projektantów, studentów wyższych uczelni technicznych i pracowników naukowych interesujących się zagadnieniami płyt i tarcz.

Tomasz Poznański

OD REDAKCJI

Z przyczyn od Komitetu Redakcyjnego niezależnych bieżący numer Biuletynu (Sept. 1968) ukazuje się z dwumiesięcznym opóźnieniem.