



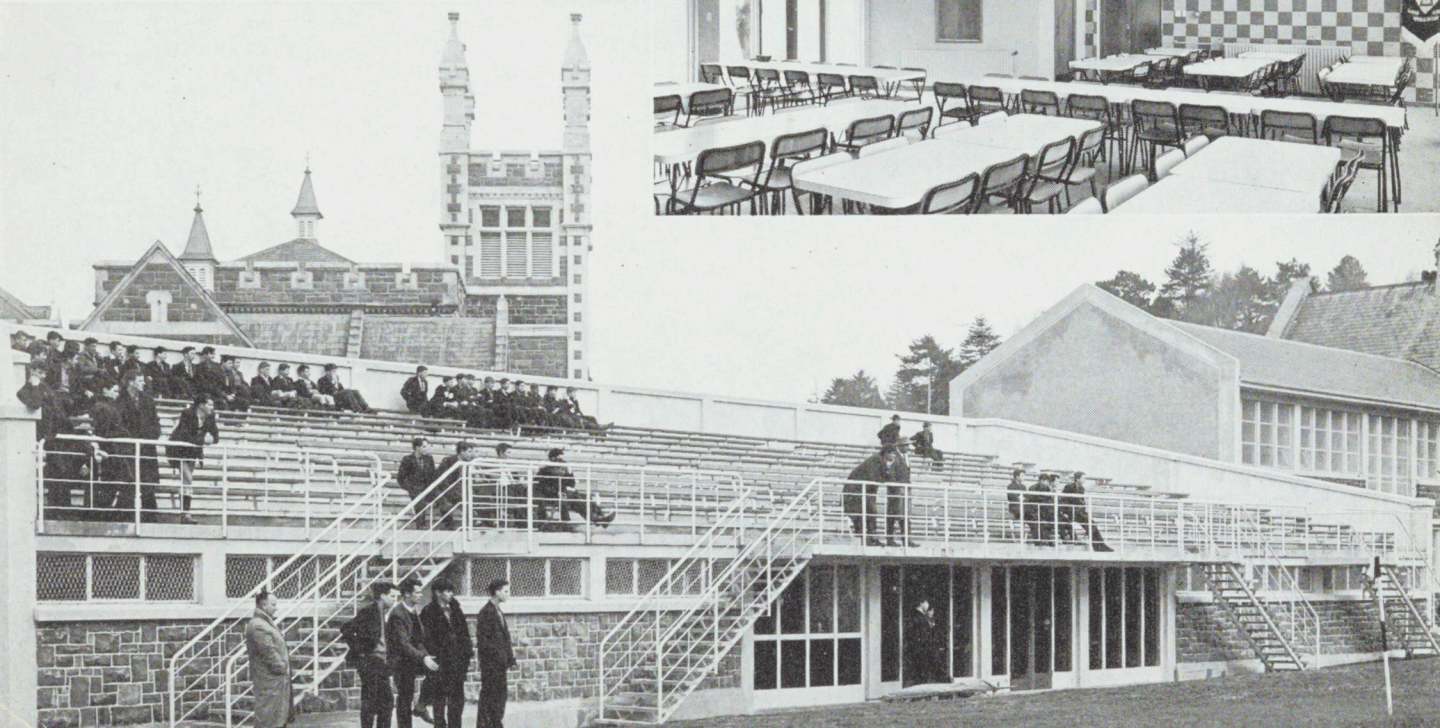
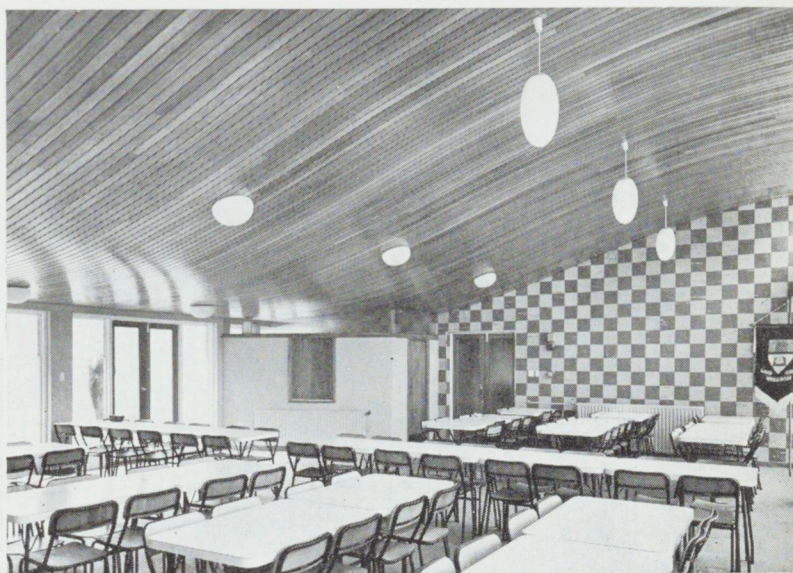
ARROWHEAD **SPRING** 1963

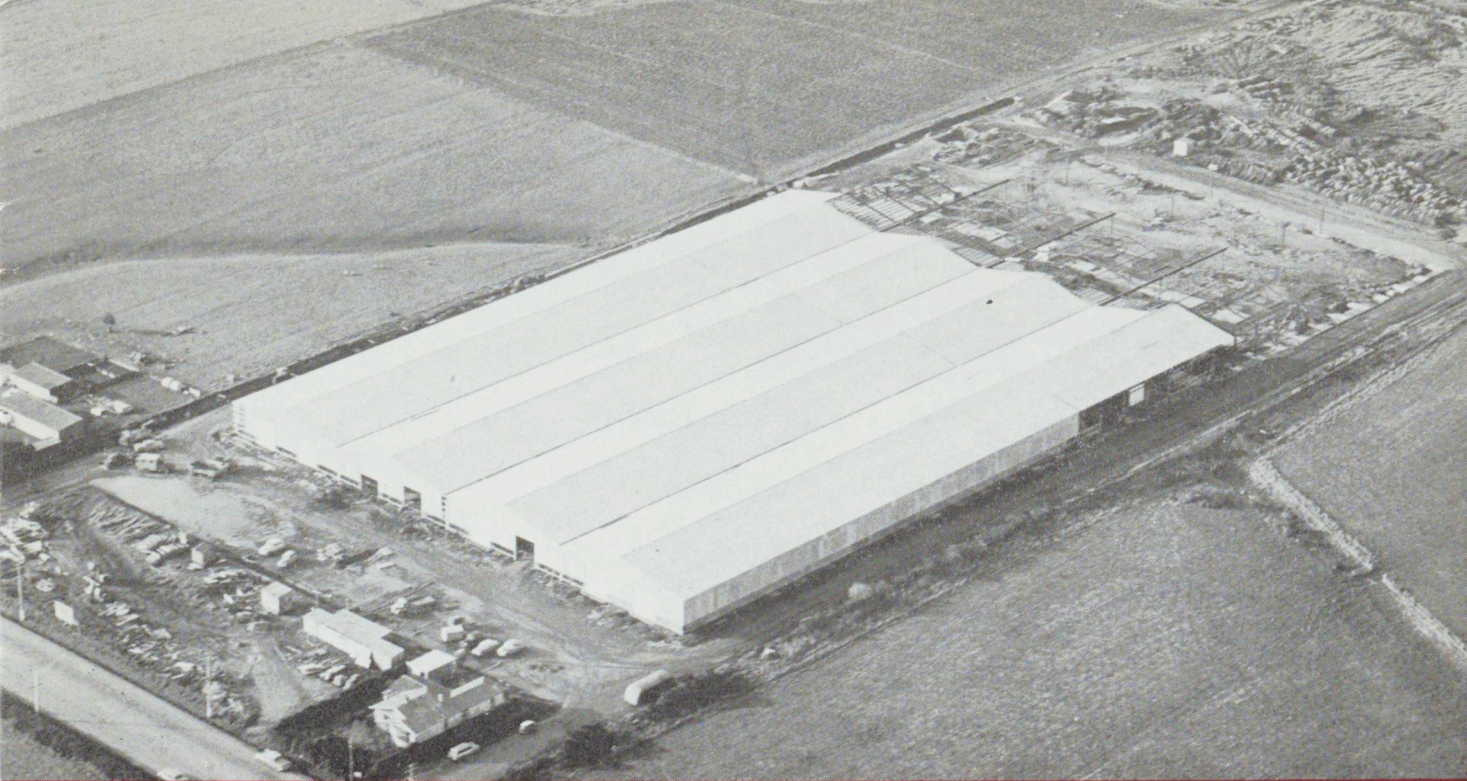
FLETCHERS IN THE SOUTH



A model of the new Government departmental building in Invercargill (above). Architects are the Ministry of Works. General Foreman is J. Mulholland and Foreman is D. Proud. Fletcher Construction started work on the £460,700 building in June.

A smaller (£20,600), but interesting job recently completed is the grandstand for the Otago Boys' High School. This was opened in August by His Excellency, the Governor-General, during the school's centennial celebrations. Photographs show the exterior of the stand and the cafeteria beneath it. Architects were McAllum and Black, Fletcher's Contract Manager was Les Nicholls and Foreman was R. Rapson.





ALSO IN INVERCARGILL: Exterior and interior views of Dalgety and N.Z. Loan Limited's £261,000 wool store additions built by Fletcher Construction. Architect was T. W. Peterson, of Sydney. General Foreman was J. Mulholland. The clients were able to take possession of $3\frac{1}{2}$ acres of the 5-acre building exactly 12 months after site works began.





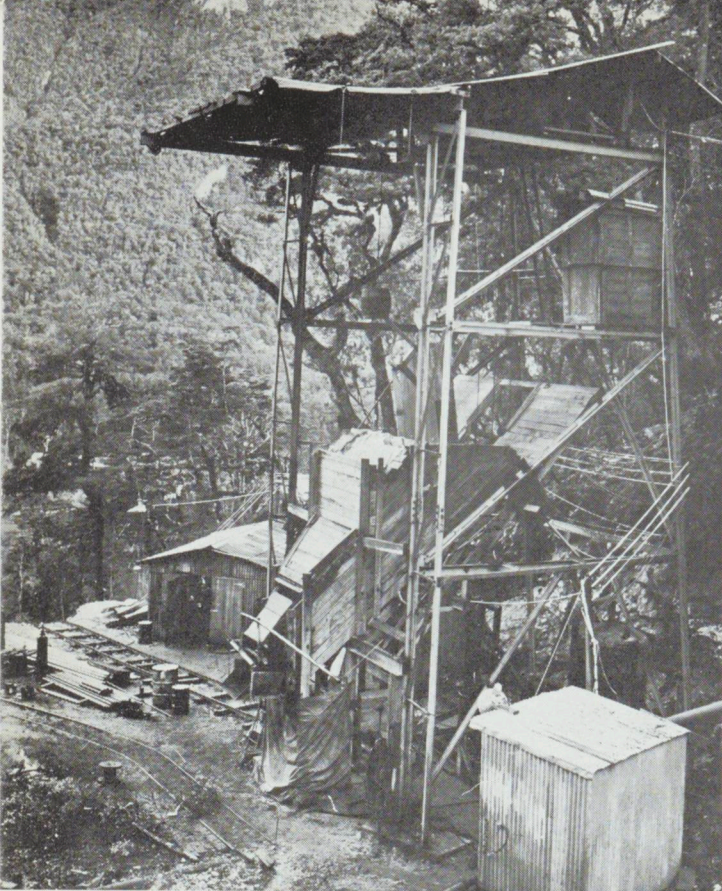
IN THE DEEP (AND RUGGED) SOUTH



WITH the objective, particularly, of providing the power requirements of an aluminum industry, a giant power station is to be built on Lake Manapouri, deep in the Notornis country of Southland. Fletcher Construction have the £37,000 dewatering and diamond drilling contract at the exploratory shaft. The first stage of the contract has been successfully completed and the shaft has been allowed to refill with water. Jimmy Hall headed up the Fletcher team. We expect to be recalled to the site in January for the second dewatering operation. The photographs on these pages, taken by *The Weekly News*, indicate the rugged nature of the area.

In the photograph above, a float plane unloads passengers at the camp site on the West Arm of Lake Manapouri. A 14-mile road is being built to give access to West Arm from Deep Cove in Doubtful Sound. The exploratory shaft is across the water opposite the camp at West Arm. Its actual site is just out of the left side of the photograph above.

Left is W. Hicks, a geologist from the Bechtel Corporation, San Francisco, who are the consulting engineers to the New Zealand Government for the overall project. He is inspecting core samples from the drilling operations.



Above are the headworks of the exploratory shaft at Manapouri. The structure is on a ledge on the mountain side.

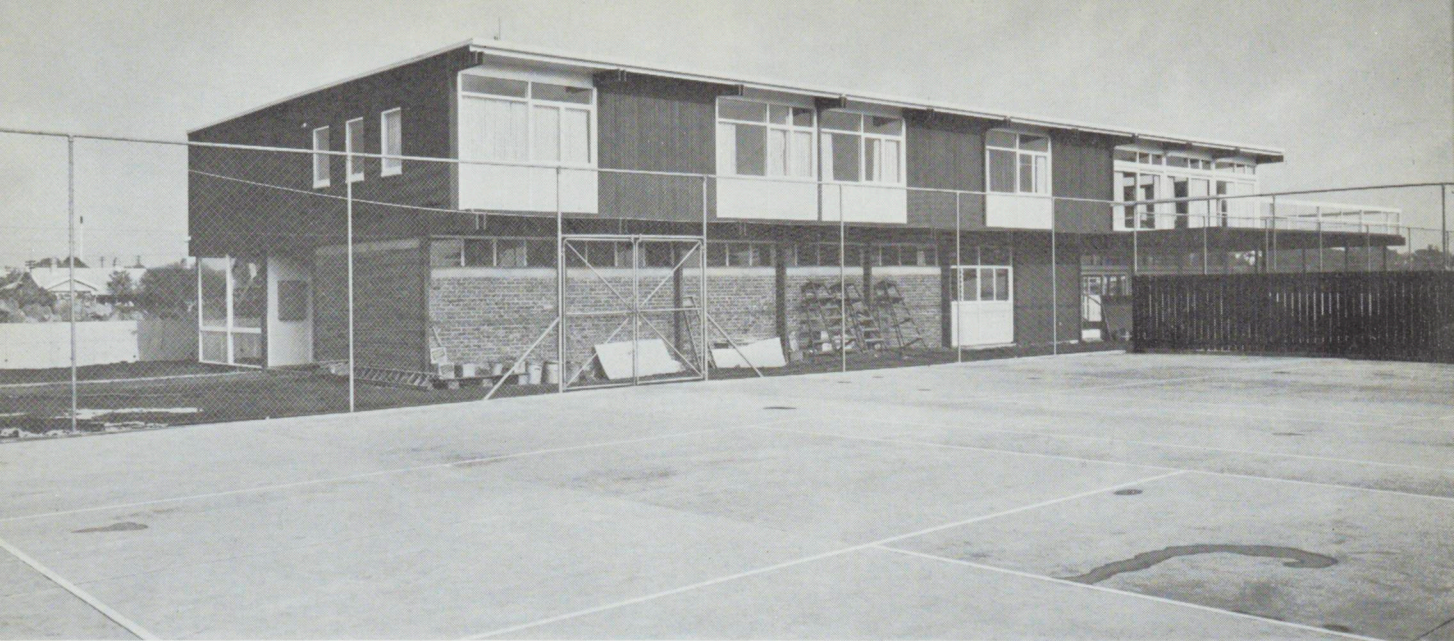
Top right is the new access road under formation near West Arm.

Below: The work camp at West Arm photographed from the exploratory shaft site.

Below right: Transport to the shaft from the camp is by boat.

Page Five





"Major Growth Sport" Develops in New Zealand

NEW SQUASH COURTS IN AUCKLAND

FLETCHER CONSTRUCTION recently completed the new squash courts and club rooms for The Remuera Lawn Tennis and Squash Rackets Club at Dilworth Avenue, Auckland. Construction timing had to fit precisely into the demolition programme for the new motorway on which were sited the old club and facilities, and Bill Anderson (Supervisor) and Ted Dudson (Foreman) and their team were complimented by club officials on their excellent performance.

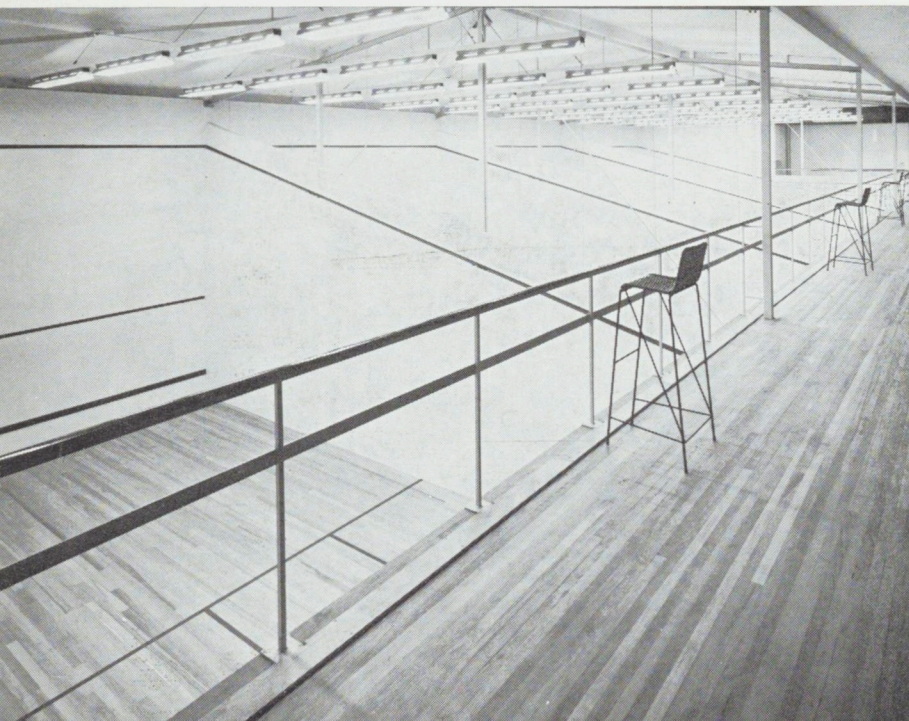
Club facilities (which include a swimming pool) are reported to be among the best, if not the best, in Australasia, and overall a total outlay of over £70,000

was involved—quite an achievement for an organisation of this nature. President of the organising committee was G. N. (Noel) Cashmore who, incidentally, worked for Fletchers at Penrose after leaving school.

Squash, which proved to be a major growth sport in Australia, is expanding very quickly in New Zealand, and particularly in Auckland where over recent months two new clubs (North Shore and Eden-Epsom) have been established. Others are under way.

Squash is played by two players in an enclosed court. The racket is similar to that used in Badminton and the ball is of soft, black rubber, hollow, about the size of a golf ball. It is a fast, strenuous game normally played for only half an hour at a time—quite enough for most people over 40.

Rules are relatively simple. The player endeavours to hit the ball within certain established limits in such a way as his opponent cannot return it. All four walls of the court are used, but the ball must at some stage of its orbit strike the front wall above the lower line ('the tin').



Photographs show interior and exterior views of the new club.

FAREWELL TO LONDON

It was announced in this year's Annual Report that we had decided to close the London office and so before the door was shut for the last time at 39 Albemarle Street, we asked Alex Marks (Director and Manager of Fletcher Holdings (London) Limited) to have some photos taken.

An opportunity occurred in August with the visit of A. W. (Alex) Craig (Chairman of Fletcher Steel and Director of Fletcher Construction) and L. E. (Laurie) Heron (Industrial Relations Officer, Fletcher Group Services) to London in connection with the recruitment of carpenters for Wellington. Also at No. 39 are seen Alex Mark's secretary, Valerie Caselberg; J. Brennan, New Zealand Chief Migration Officer, London; G. Fox, New Zealand Trade Commissioner's office; John Logan, of Guest, Keen, Nettlefolds; and Ken Sewell of James Sewell and Company Limited.

It is not inappropriate that one of our last references in *Arrowhead* to the London office should be in relation to a recruiting drive. The foundations for the London office were laid in 1951 when K. G. (George) Fraser (now managing-Director, Fletcher Group Services) was in London on a similar mission and, to help him, Alex Marks (a Rongotai College old boy) was engaged to assist with interviews and carry on the work. Besides recruitment work, the London office has played an important role in the purchasing of supplies, especially steel, and liaison with United Kingdom companies.

However, with improved communications—phone, air mail and air travel — and with changing sources of supply, a London office has ceased to be essential to our operations. Alex Marks is shortly returning to New Zealand.



Alex Marks



Alex Craig, Laurie Heron, Valerie Caselberg, Alex Marks



J. Brennan, Alex Craig, Alex Marks, G. Fox



John Logan

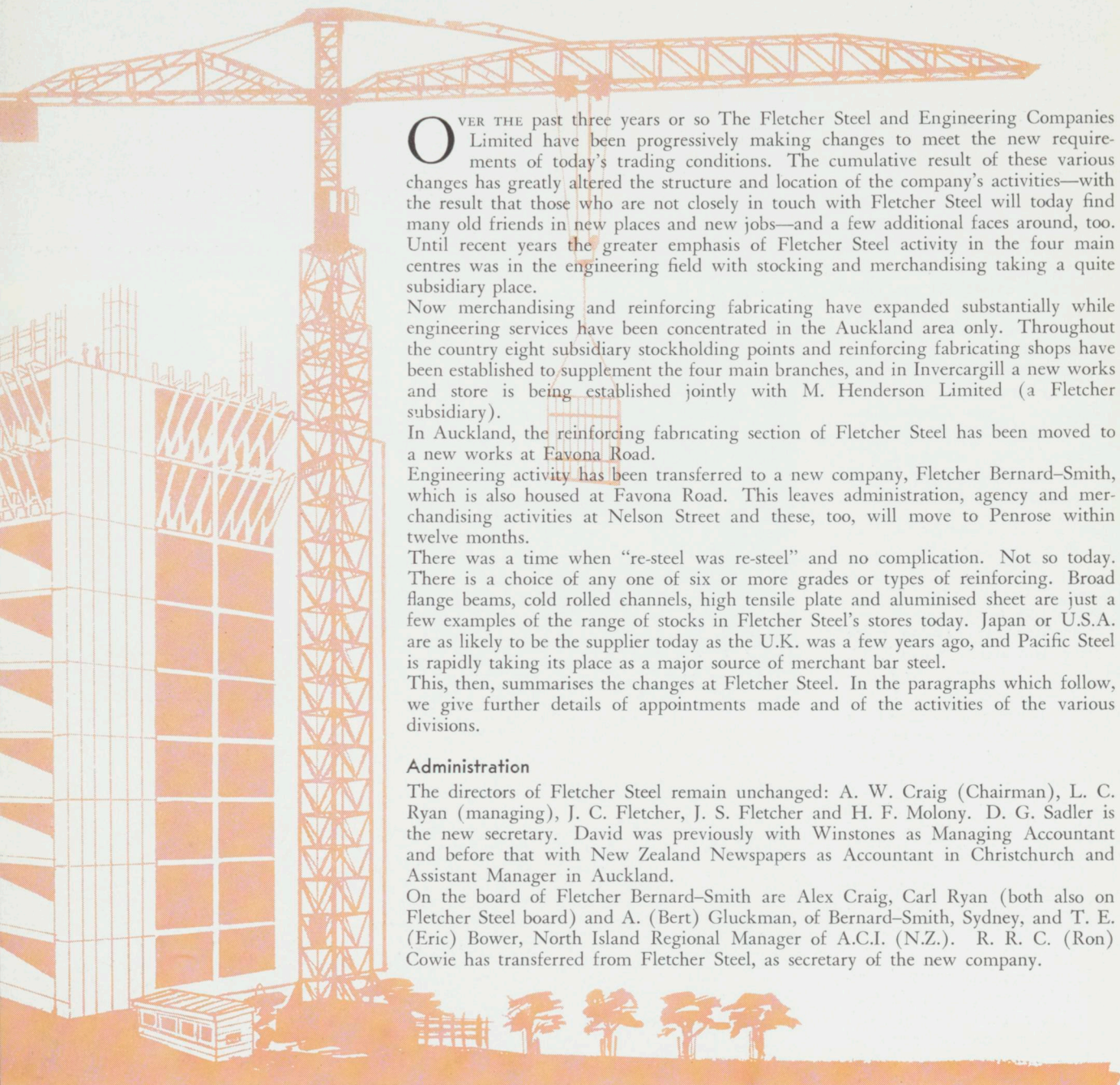


Laurie Heron



Ken Sewell, Alex Craig, Alex Marks, John Logan

CHANGES AT FLETCHER STEEL TO MEET NEW TRADING PATTERNS



OVER THE past three years or so The Fletcher Steel and Engineering Companies Limited have been progressively making changes to meet the new requirements of today's trading conditions. The cumulative result of these various changes has greatly altered the structure and location of the company's activities—with the result that those who are not closely in touch with Fletcher Steel will today find many old friends in new places and new jobs—and a few additional faces around, too. Until recent years the greater emphasis of Fletcher Steel activity in the four main centres was in the engineering field with stocking and merchandising taking a quite subsidiary place.

Now merchandising and reinforcing fabricating have expanded substantially while engineering services have been concentrated in the Auckland area only. Throughout the country eight subsidiary stockholding points and reinforcing fabricating shops have been established to supplement the four main branches, and in Invercargill a new works and store is being established jointly with M. Henderson Limited (a Fletcher subsidiary).

In Auckland, the reinforcing fabricating section of Fletcher Steel has been moved to a new works at Favona Road.

Engineering activity has been transferred to a new company, Fletcher Bernard-Smith, which is also housed at Favona Road. This leaves administration, agency and merchandising activities at Nelson Street and these, too, will move to Penrose within twelve months.

There was a time when "re-steel was re-steel" and no complication. Not so today. There is a choice of any one of six or more grades or types of reinforcing. Broad flange beams, cold rolled channels, high tensile plate and aluminised sheet are just a few examples of the range of stocks in Fletcher Steel's stores today. Japan or U.S.A. are as likely to be the supplier today as the U.K. was a few years ago, and Pacific Steel is rapidly taking its place as a major source of merchant bar steel.

This, then, summarises the changes at Fletcher Steel. In the paragraphs which follow, we give further details of appointments made and of the activities of the various divisions.

Administration

The directors of Fletcher Steel remain unchanged: A. W. Craig (Chairman), L. C. Ryan (managing), J. C. Fletcher, J. S. Fletcher and H. F. Molony. D. G. Sadler is the new secretary. David was previously with Winstones as Managing Accountant and before that with New Zealand Newspapers as Accountant in Christchurch and Assistant Manager in Auckland.

On the board of Fletcher Bernard-Smith are Alex Craig, Carl Ryan (both also on Fletcher Steel board) and A. (Bert) Gluckman, of Bernard-Smith, Sydney, and T. E. (Eric) Bower, North Island Regional Manager of A.C.I. (N.Z.). R. R. C. (Ron) Cowie has transferred from Fletcher Steel, as secretary of the new company.



David Sadler (Secretary, Fletcher Steel) with Carl Ryan (Managing-Director).

Purchasing

Five years ago the steel industry throughout the world breached the long-standing gap between supply and demand. Huge projects in many countries had been completed and the world-wide call for steel fell away. The effects were soon felt in North America. Canada was quick to enter the export market and corner a share of New Zealand's tonnage which had traditionally come from Australia and U.K. Continental mills followed Canada, and South Africa joined the exporters for a time.

Formerly steel from Commonwealth sources enjoyed a tariff of 20%. In 1962 this was reduced to 5%. The door was well and truly opened and latterly Japan has won a major share of the business of this country.

To keep in touch with mills all over the world whose approach to export business is as different as chalk from cheese; to rationalise the differing shipping and marketing

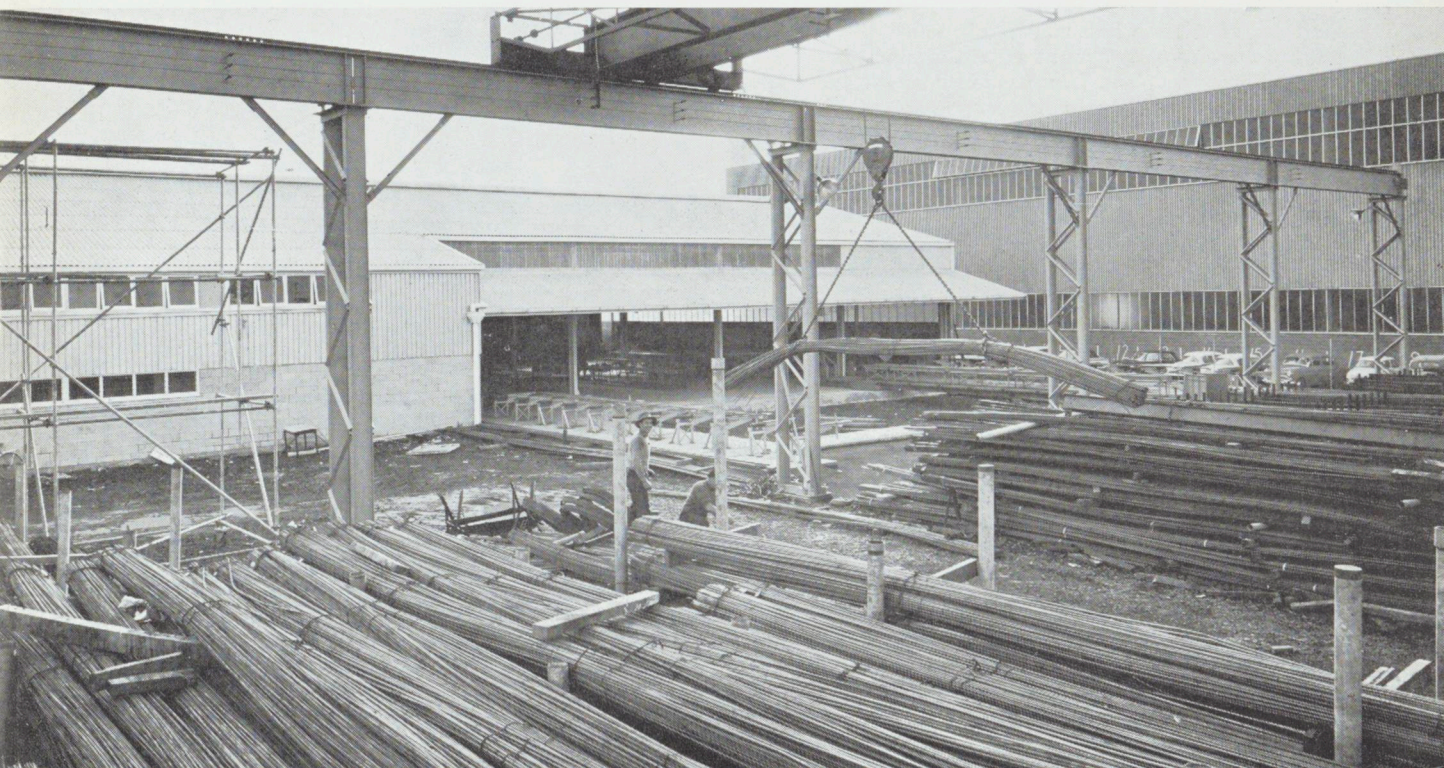


Bruce Gollan (on left) finds a stock size kimono inadequate for his height—a moment of relaxation outside a tiny Japanese inn, during a visit to survey steel mills in Japan.

problems; to identify the increasing range of steel types, qualities and finishes; to keep adequate and well-balanced stocks and yet be able to take advantage of violent price fluctuations, are all complex tasks.

Bruce Gollan heads up the Purchasing Division and Ted Kane (officially retired but still very much with us) controls import licensing. Bruce's title is Chief Purchasing Officer and Auckland Sales Manager.

Fletcher Steel's new reinforcing shop, Favona Road.





Ken Winton (Manager) and Fergus Boyd (Field Representative) of Fletcher Steel's Agency Division.

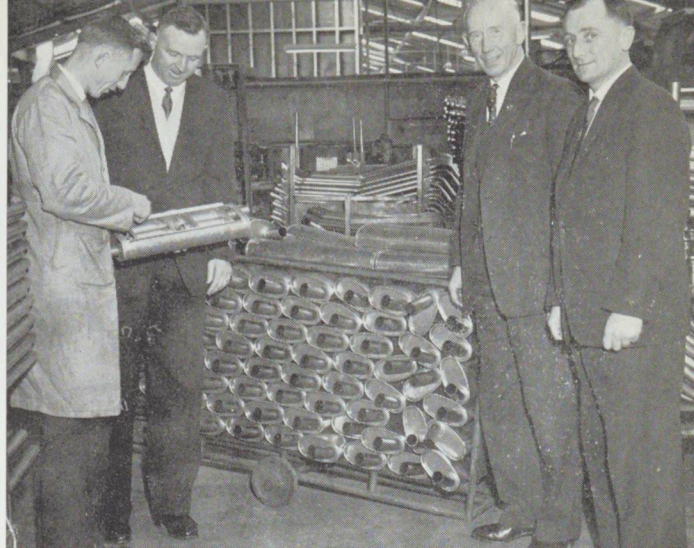
Agency

The Agency Division is a Head Office service department responsible for marketing a wide range of engineering equipment, both imported and locally manufactured. Division manager is Ken Winton. Fergus Boyd, who was with Fletcher Steel in Whangarei for many years, has been transferred to Head Office as field representative.

Among the agencies held are ARMCO, LINK-BELT and BABCOCK-WEITZ tower cranes. The Armco Steel Corporation of U.S.A. is world-renowned for its development of special and high quality flat rolled products and the Agency Division is at present working on a promotional programme for drainage and specially fabricated products which are imported from Armco subsidiaries in U.K. and Australia. These include corrugated steel pipe culverts, "Flex-Beam" guard rail for highway danger spots and Armco cold formed steel purlins and girts.

Link-Belt products include materials handling and industrial power transmission equipment as well as sanitary engineering and screening plant. We manufacture Link-Belt industrial vibrating screens under licence.

Not least amongst the Agency Division activities is the distribution of the "Vulcan" winch. This 5,000 lb. hand winch, designed and recently modified by Fletcher Steel, has great versatility and strength. (The name derives from the



Using ARMCO aluminised steel sheet, a new muffler for the Ford Motor Company has recently been developed and manufactured by Southward Engineering Co. Ltd., Wellington. Len Southward (Managing Director) and his son Roy are shown here with Bill Reidy (Area Manager, Fletcher Steel—second from left) and Tom Fox (Sales Manager—far right) inspecting the new muffler at the Southward Works.

old steel company in Nelson Street—see 35-year-old advertisement on back cover.) The sketch on page 8 is of a Babcock-Weitz tower crane.

New Depots Established

Depot Managers have all been appointed from sales areas in which they were previously operating. They are

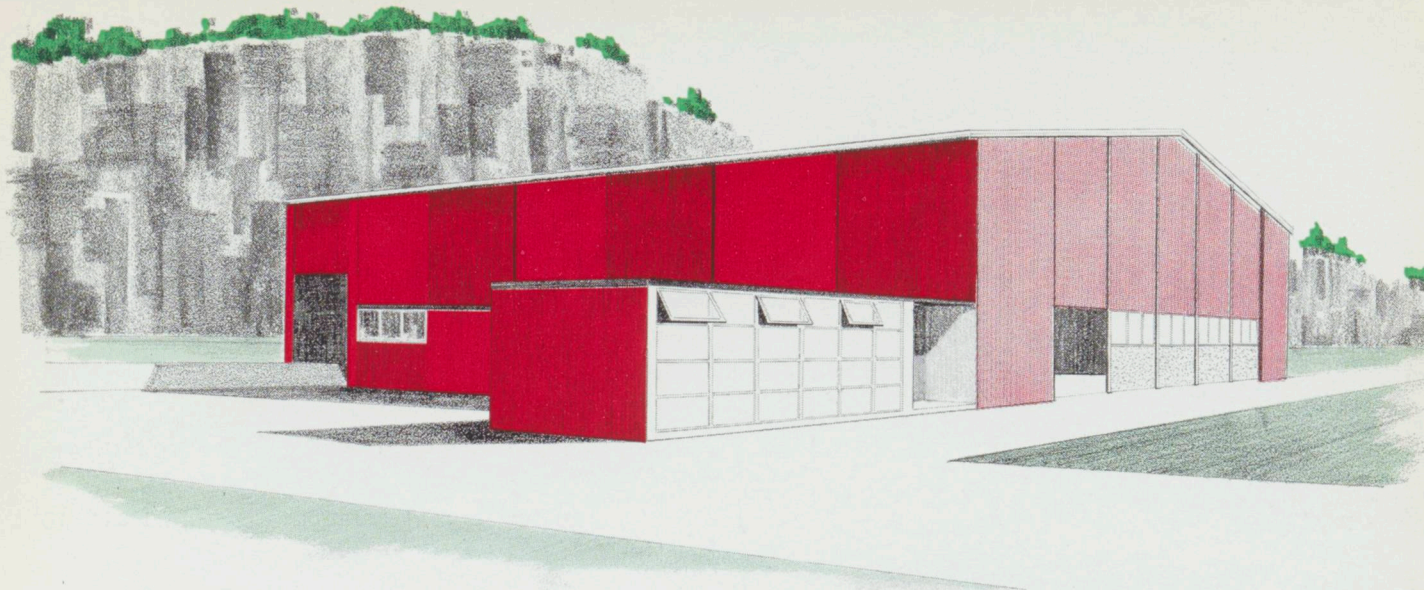
Whangarei:	Doug. Notley
Hamilton (including	
Tauranga and Rotorua):	Alan Carruthers
Napier (and Gisborne):	Bill Bell
Palmerston North:	Trevor Donaldson
Nelson:	Ron Mair
Invercargill:	Arnold Spiers

Main Area Managers are:

Auckland:	W. C. (Wendell) Phillips
Wellington:	W. J. (Bill) Reidy
Christchurch:	W. P. (Win) Philp
Dunedin:	K. J. (Ken) Briggs.

Wendell Phillips, Auckland Area Manager (second from right, front row) and Jack Wallace, Works Manager (second from left, front row) with their team at Fletcher Steel, Favona Road.

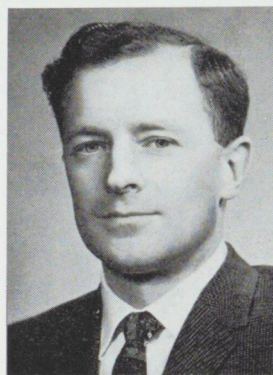




Sketch of the new Napier depot.

Fletcher Bernard-Smith

The new company is a 50-50 partnership between Fletchers and the Bernard-Smith Company of Sydney. Bernard-Smith, a member of the A.C.I. Group of Companies, is one of the largest steel fabricators in Australia and specialises in heavy plate, tank and pressure vessel fabrication, and the Auckland works will be engaging in this field of engineering as well as structural fabricating. One of the earliest contracts is for the appurtenances of the oil refinery tanks at Marsden Point. D. S. (Dave) Fenton is Manager of the company. R. J. (Ray) Bradley is Works Manager and M. (Mike) Kulakowski, who transferred from Bernard-Smith, Sydney, is Commercial Manager.



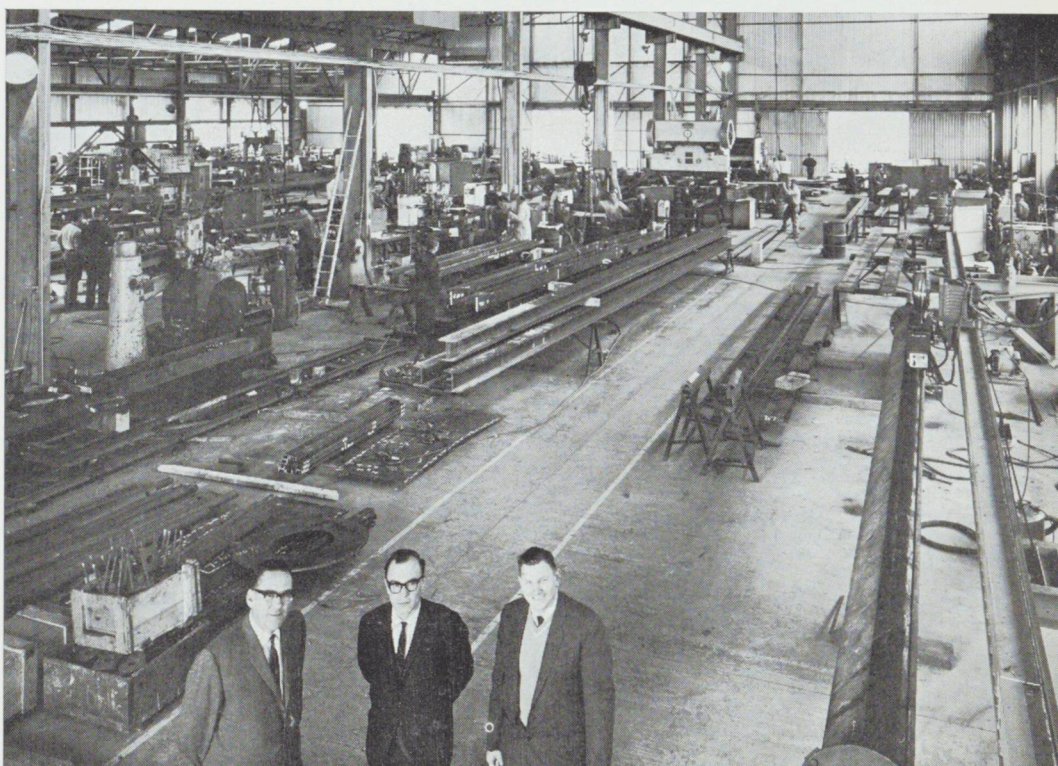
Arnold Spiers (Invercargill) and Ken Briggs (Dunedin).

Reinforcing

Before plans were laid for the new reinforcing works at Favona Road, Otahuhu, Carl Ryan and Dave Fenton, then Manager of the Engineering Division of Fletcher Steel, studied reinforcing plants throughout Europe.

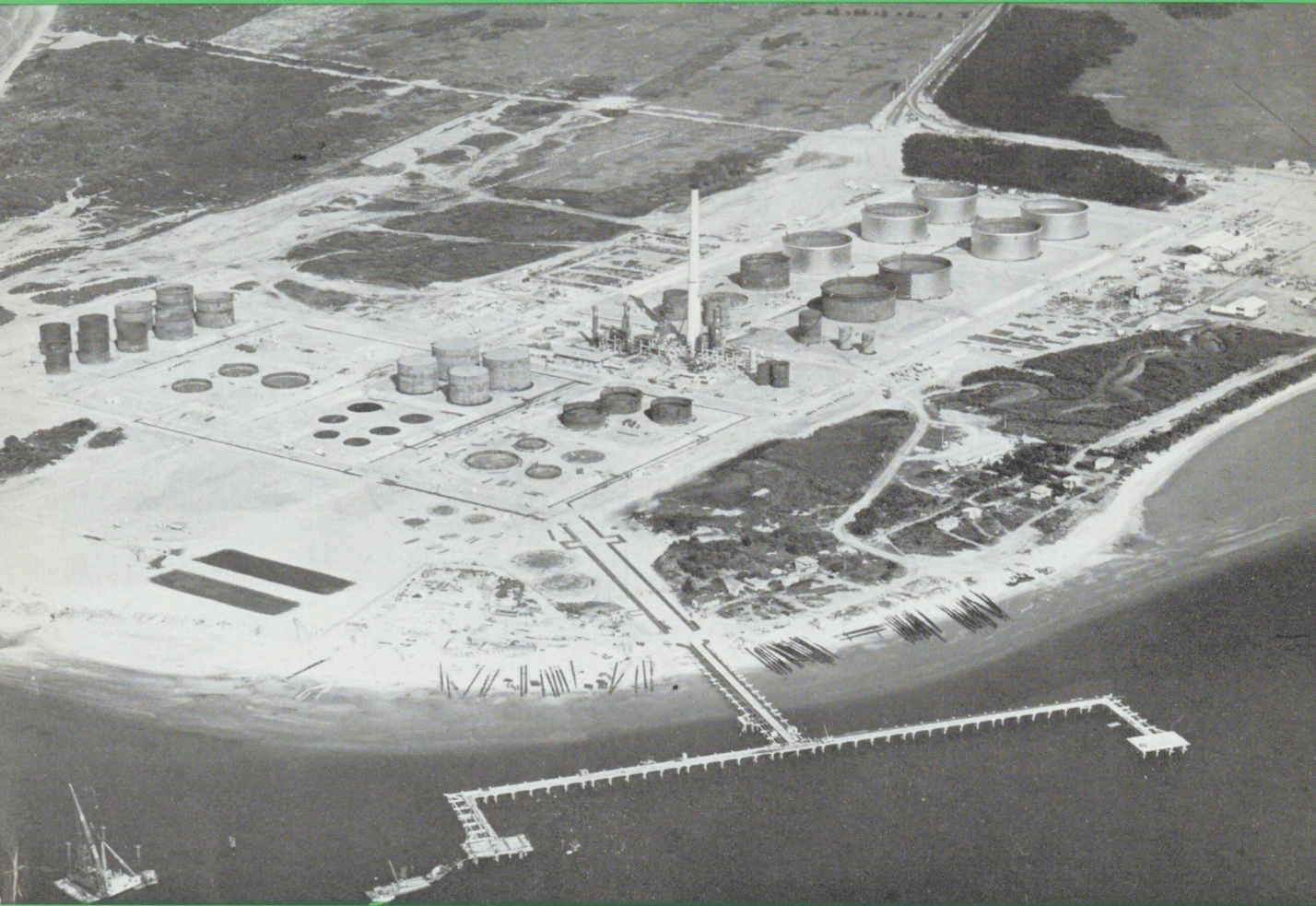
Our new works were designed around Swiss and German methods and equipment, with plant coming mainly from Krupp-Dolberg in Germany. The works are believed to be the most modern in the Southern Hemisphere.

Right: Dave Fenton, Mike Kulakowsky and Ray Bradley at Fletcher Bernard-Smith, Favona Road.



New Zealand's First Oil Refinery

PROGRESS AT MARSDEN POINT



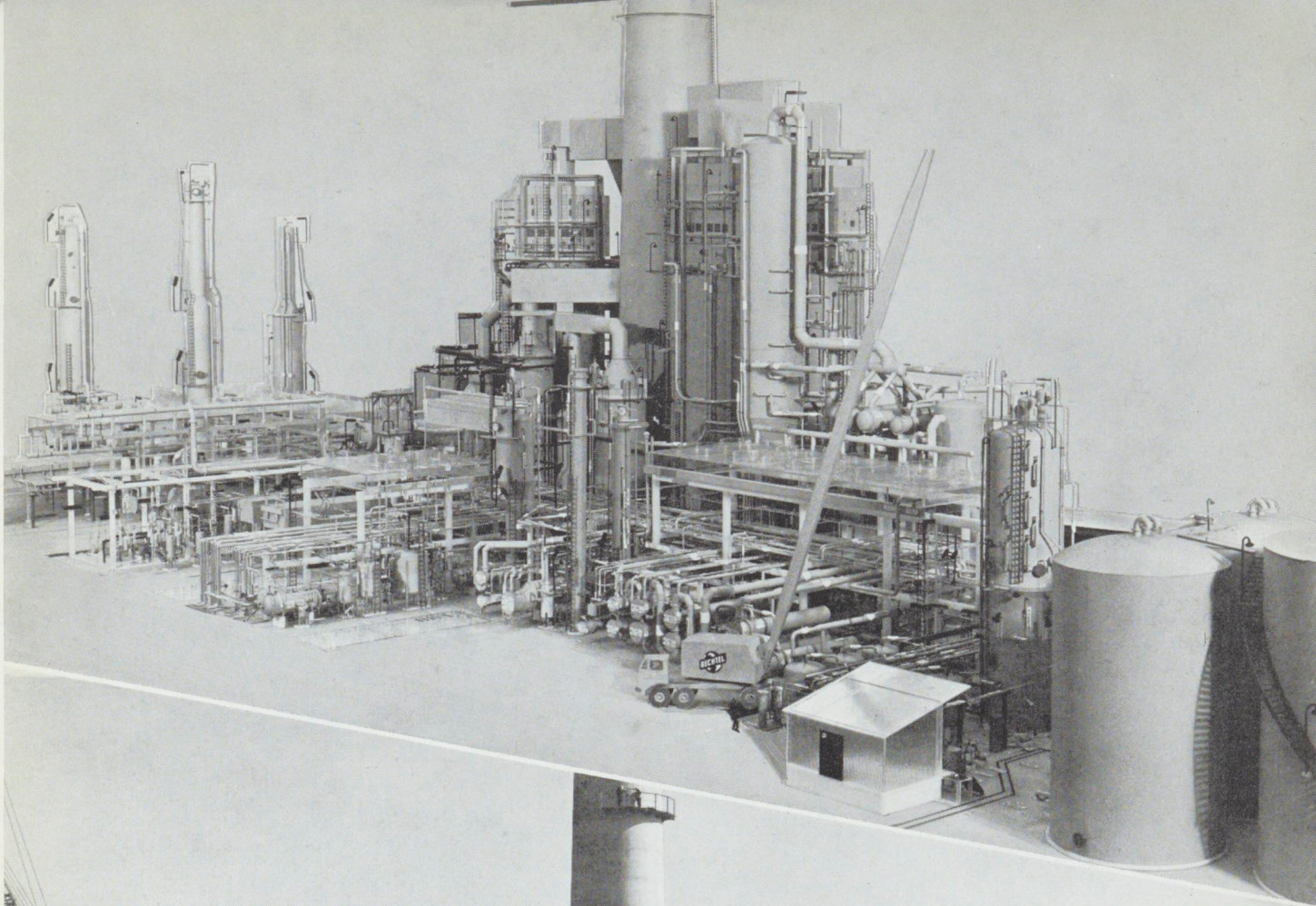
PHOTOGRAPHS on these pages indicate the progress being made with the construction of New Zealand's first oil refinery at Marsden Point, Whangarei. The refinery is being built for the New Zealand Oil Refining Company Limited by a joint venture group sponsored by Bechtels, of U.S.A., and including Fletchers, and Wimpeys of Britain. L. D. (Larry) Pitchford, of Bechtels, is Project Manager. Expected to be commissioned early next year, the refinery should meet all New Zealand's motor spirit requirements as well as producing

naphtha, kerosene, bitumen and other by-products.

The refining company is a joint venture of Shell, Mobil, Caltex, British Petroleum and Europa Oil.

In the aerial view above, the 325-foot concrete chimney towers over the plant and the tanks.

On the opposite page at top is a model of the process area of the refinery, and below a closer photograph of the chimney and process area, with the laboratory and control house in the foreground.



THE FATHER OF AIR CONDITIONING

WHEN a usually well-informed trade journal comments that the fertiliser provisions in the Budget should stimulate Carrier Air (N.Z.) Limited, it seems more than time to dispel any notions that this company is concerned with aerial top-dressing.

Carrier Air (N.Z.) was established in June, 1962, as an equal partnership between Carrier Air Conditioning (Holdings) Limited, of Australia, and Fletchers. The name and the company originated with a very able and remarkable engineer named Willis Haviland Carrier. Dr. Carrier, as he later became, was born in New York State in 1876 of parents of British descent. He won a scholarship to Cornell University and graduated in 1901 with a good record in study and sport.

Immediately after graduation, the young engineer joined the Buffalo Forge Company which manufactured, among other things, ventilating fans, heating coils and air distributing apparatus. His early work concerned heaters and his work on heat transfer characteristics set a pattern still followed today.

In 1902 he designed what is regarded as the first scientific air conditioning system. This was installed in the Sackett-Wilhelm printing plant in Brooklyn, New York, to control the moisture content which was affecting the paper and therefore colour registration in printing.

Other pioneers had been working on temperature control, but Dr. Carrier was the first to add humidity control. In 1904 he patented "an apparatus for treating air"—a spray type unit which by heating the water increased the humidity and by cooling it reduced the humidity.

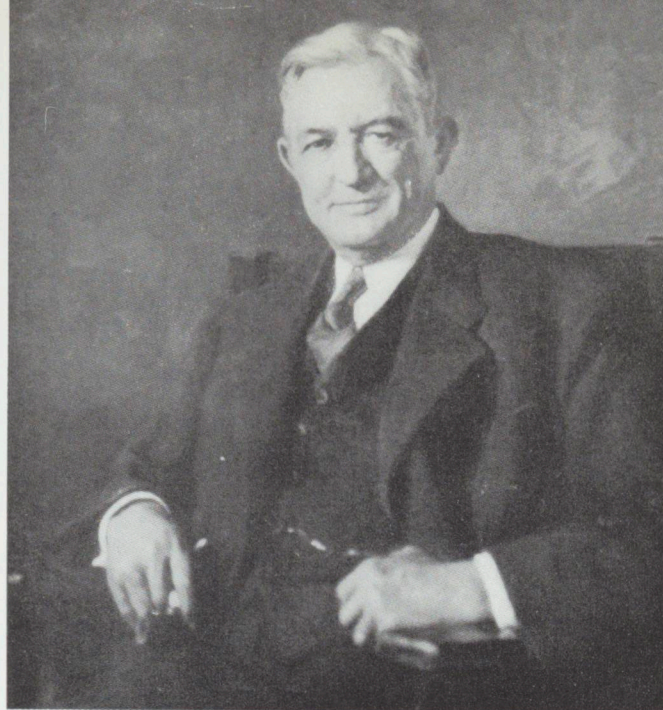
Some 40 Inventions

True air conditioning involves, besides control of temperature and humidity, purification of air by washing or filtering, movement of air and ventilation.

Altogether, Dr. Carrier was responsible for some 40 patents in the field of air conditioning. In 1911, ten years out of University, in a lecture before the American Society of Mechanical Engineers, he reported his Rational Psychrometric Formulae which were to stand for decades as the authoritative basis for all fundamental calculations in the industry.

Eleven years later he designed a centrifugal compressor for air conditioning and refrigeration which was the first major advance in mechanical refrigeration since 1873. In 1939 he invented the Conduit Weathermaster System which distributed air at high velocity through small conduits to individual rooms in large buildings. It thus overcame the necessity for large ductworks along walls and ceilings. These took up space which could not be afforded in tall buildings.

Dr. Carrier was free from long periods of discouragement because he did not have to struggle to find a market for his inventions—he invented to fill a demand he knew existed. *He also believed in the principle that the customer must be pleased.* Early in his career at Buffalo Forge, by working to remove faults in his company's equipment he was soon saving



Dr. Carrier's "Magic Formula" for Eliminating Worry

Step I. I analysed the situation fearlessly and honestly and figured out what was the worst that could possibly happen as a result of this failure.

Step II. After figuring out what was the worst that could possibly happen, I reconciled myself to accepting it, if necessary.

Step III. From that time on, I calmly devoted my time and energy to trying to improve upon the worst which I had already accepted mentally.

Dr. Carrier quoted by Dale Carnegie in
How to Stop Worrying and Start Living

the company tens of thousands of dollars previously spent on correcting faulty equipment.

The Carrier Company began as a subsidiary of Buffalo Forge in 1907 and in 1915 became an independent company with Dr. Carrier as president. Despite difficulties in the depression, the Carrier Corporation survived and grew.

Today it is shown as 194th in Fortune's list of the 500 largest industrial companies in the U.S.A., with annual sales over 270 million dollars, and a staff of over 11,000.

Its equipment is installed in factories, mines, aeroplanes, ships, hospitals, hotels, shops and offices—including the United Nations Secretariat Building in New York.

Dr. Carrier was active in his company's affairs until shortly before his death in October, 1950.

Carrier Air (N.Z.) has offices at 41 Shortland Street, Auckland, and a small assembly plant at Southdown, Auckland. The New Zealand Board is J. C. M. Frost (chairman), and L. C. Ryan (alternative for J. H. Roxburgh), J. Espie, and J. P. Buddle (who is also secretary). E. A. Mann, who is manager, is returning to Australia and will be replaced by W. Wilkinson.

FLETCHER HOLDINGS BALL, 1963, CHRISTCHURCH



The Butler Timber Company party.



Arthur Collett (Fletcher Industries, Plywood Division) and Mrs. Collett (right) with friends.



Fletcher Construction (Insulation and Acoustics Division) and friends.



George Trotter (Fletcher Steel) and Mrs. Trotter



Bill Cadigan (Fletcher Steel) and Mrs. Cadigan

This is the Mixer which was "on the job" at The Chateau, National Park, Tongariro, which was completed months under contract time.

1928

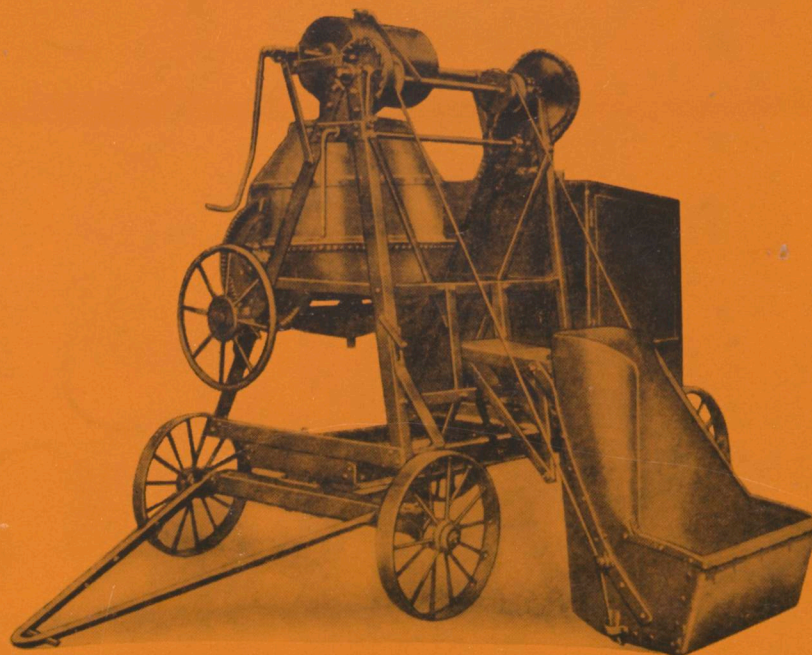
The only reason why you will not like this machine is that it will always be worrying you about getting the materials "to" and "away" from it.

All weaknesses found in previous tilting mixers have been gradually eliminated, so that the machine will now stand up against the fastest work on modern contracts.

It will beat any other Mixer of equal size for output and "standing up to the job." That is why the Fletcher Construction Co., Ltd., have standardised them on their jobs. Their slogan is:—"Only the best will do for us."

This is the Mixer which is helping Mr. Smith to show Dunedin (as they look at the progress of the new Fertilizer Works at Ravensbourne) what high speed building really does mean.

5 Mixers at work here.



This is the Mixer with a guaranteed output, our statements are not idle boasts. We can always demonstrate the machine doing the figures we give.

This is the Mixer which challenges any other of similar size, and we forego the difference in price which is in our favour.

You will remember that not much time was wasted in the building of the Civic Theatre in Auckland. This was the mixer used, and, to quote the words of Mr. Rogers, of the Super Construction Co., Ltd., of Australia, "It is a great mixer."

THE **VORTEX**
MIXER Made in N.Z.

SOLE MAKERS

The Vulcan Steel Construction Co., Ltd., AUCKLAND

HISTORIANA: And this is an advertisement which A. W. (Alex) Craig, Chairman of Directors of Fletcher Steel, has been treasuring for some 35 years. The Vortex mixer has vanished with the years, but Fletcher Steel are still in the manufacturing business and the name of the old company, which became a part of Fletcher Steel, is preserved in the Vulcan winch (see pages 8-11).