

WELLINGTON EDITION.

PROGRESS

N.Z. BUILDING



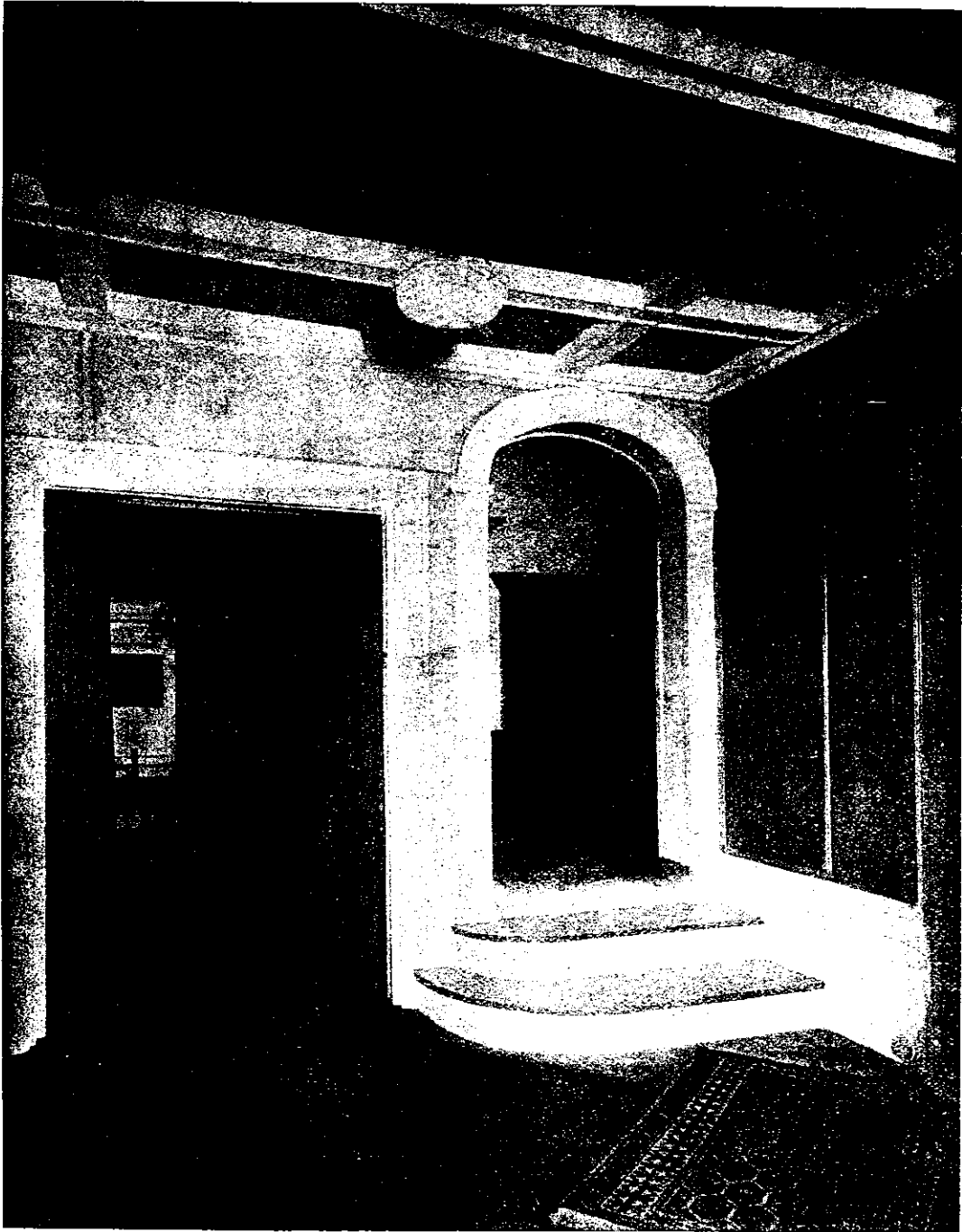
MARSEILLES TILES

BRISCOE & CO. LTD.

SEPTEMBER, 1919

Price 9d.

Beaver Board makes the best Wall Lining.



One of the many beautiful homes in which **Beaver Board** is used. Supplied in panels 36 ins. and 48 ins. wide by 8 ft. to 16 ft. long

— Write for samples and illustrated pamphlets to —

BRISCOE & Co., Ltd., Sole New Zealand Agents.

Mention of "Progress" when writing ensures prompt attention

Two New Lines

That we have put on the New Zealand Market are proving a Great Success!!

ONE IS THE

'REX' Concrete Mixer

made in a range of sizes to suit large or small contracts. It can be supplied with Petrol Engine, Electric Motor, or minus power, as may be desired. Its value is proved by the number of repeat orders that have been given.

Several are now on Order for one of the leading Firms amongst the Building Contractors of the Dominion.

THE OTHER IS THE

'WADE' Portable Drag Saw

which consists of a 6ft. Saw Blade driven by a Petrol Engine. It is simply placed in position against a log, started up, and cuts its way through the log in a marvellously short time. One of these Saws can do as much work in a day, as 10 men can. No wonder our stock has all been sold, and orders placed against arrival of next shipment.

JOHN CHAMBERS & SON LTD.

Fort Street (Head Office)	-	AUCKLAND
Jervois Quay and Cable St.	-	WELLINGTON
Read's Quay	-	GISBORNE
200/2 St. Asaph Street	-	CHRISTCHURCH
Stuart and Cumberland Streets	-	DUNEDIN

SOLE AGENTS FOR NEW ZEALAND.

N.Z. BUILDING PROGRESS.

DIRECTORY

OF SUPPLIERS OF MATERIALS, &c., &c.

We frequently get enquiries from Architects, Builders, Engineers, &c., asking for names and addresses of suppliers of specialities connected with the various trades. Suppliers frequently assume that because they send out a printed circular or make a call now and then on users, that they have done all that is necessary to "keep the users' memory green." This is quite a mistake. The User must have instant and ready means of reference to some reliable source of information that he sees regularly.

This is why we have started this "Directory" to which hundreds of our clients refer almost daily. If you are a regular advertiser with us, your name goes into the Directory free of charge. If not, write us for terms which are nominal.

Architectural Works—

"Progress" Publishing Dept., 10 Willis Street

Architectural Course—

Banks Commercial College, Woodward Street, Wellington.

Baths—

Hargreaves, Jas., Auckland

Bricks—

Glenmore Brick Yards, Hillsborough, Christchurch

Buying Agents (English)—

Wm. Wilson & Sons, Abchurch Lane, London, E.C

Cement Pipes—

Cement Pipe Co., Masterton

Cement—

Craig, J. J., Ltd., 100 Queen Street, Auckland

Golden Bay Cement Coy., Nathans' Buildings, Wellington

Reese Bros., Christchurch.

Chote, W. A., Farish Street, Wellington

Cement (Waterproof)—

Trus-Con Waterproofing Paste. John Chambers & Son Ltd., Auckland, Wellington, Gisborne, Christchurch and Dunedin

Liquid Konkret. Francis Holmes, Woodward St., Wellington and Lichfield Street, Christchurch.

Concrete Paint—

Holmes, Francis, Woodward Street, Wellington; Lichfield Street, Christchurch

"Stone-Tex." John Chambers & Son Ltd., Auckland, Wellington, Gisborne, Christchurch and Dunedin.

Directory—

H. J. Clark, 46 Morgan St., Petersham, Sydney, Australia

Fire Bricks—

Tyneside Proprietary, Ltd. Customhouse Quay, Wellington

Electrical Equipment—

Tolley and Son Ltd., Chew's Lane, Wellington.

Glass Manufacturers (British)—

Pilkington Bros., Ltd., C/o Fred. W. Butcher, P.O. Box 1094, Auckland.

Hotels—

McCarthy's Family Hotel, Taupo Quay, Wangarui

Leadlights—

Bradley Bros., 782 Colombo Street, Christchurch

Patent Agents—

Baldwin & Rayward, Auckland, Wellington, Christchurch and Dunedin

Photographers—

Bartlett, W. H., 10 Willis Street, Wellington, and Queen Street, Auckland

Ranges—

Roberts' Iron, Steel and Oven Works, 93 Manners St., Wellington

Roofing Tiles and Slates—

Briscoe and Co., Ltd., Auckland, Wellington, Christchurch, Dunedin and Invercargill

Chambers, John & Son, Ltd., Auckland, Wellington, Gisborne, Christchurch and Dunedin

Gualter, Aubrey & Co., Featherston Street, Wellington

Redpath and Sons, Ltd., Christchurch, Wellington, Auckland

Sawmillers' Supplies—

McMillan, Alexander Ltd., Herbert St., Wellington.

Ross, Alex. & Co., Halley's Lane, Wellington.

Steel Construction—

Burt, A. and T. Ltd., Auckland, Wellington, Christchurch, Timaru, Dunedin, Invercargill

Timber Merchants—

Leyland O'Brien, & Coy., Auckland

Waterproof for Cement—

Trus-Con Waterproofing Paste. John Chambers & Son, Ltd., Auckland, Wellington, Gisborne, Christchurch and Dunedin

Liquid Konkret. Francis Holmes, Woodward St., Wellington and Lichfield Street, Christchurch.

Mention of "Progress" when writing ensures prompt attention

N.Z. BUILDING PROGRESS

Published Monthly by the Proprietors, Harry H. Tombs Ltd.

22 Wingfield Street — Wellington, New Zealand

TELEPHONE 1651

P.O. BOX 481.

Annual Subscriptions:—To any address 8/6 post free, single copies 9d. Note: 1/- will be allowed on this account if paid in advance.

Remittances should be made by Post Office or Money Order. All cheques, plus exchange, to be made payable to Harry H. Tombs Ltd., and sent direct to P.O. Box 481, Wellington.

All communications to be addressed to "The Proprietors, 'Progress,' Box 481, Wellington."

Advertising Rates will be sent on application.

To Our Advertisers:—All copy for advertising matter must be in our hands by the 10th of the month preceding publication, otherwise no responsibility with regard to insertion will be undertaken.

The Editor will at all times be glad to receive Illustrated Articles on subjects of interest for consideration, provided the articles are short and to the point, and the facts authentic.

Should subscribers continue to receive copies of this journal after expiry of current year, it will be accepted as an intimation that they are desirous of subscribing for a further period of twelve months.

In case of change of address, or irregularity of this paper's delivery, subscribers should send immediate notice.

Subscription Order

191

MANAGER:

Messrs HARRY H. TOMBS LTD.,

22 Wingfield Street,

WELLINGTON.

Dear Sir,

Kindly add my name to your list of subscribers to "Progress" for which I enclose postal notes amounting to 8/6, covering subscription for twelve months.

Yours faithfully,

Name.....

Address.....

Conditions of "Progress" Competitions

The Editor reserves the right of publishing any or all the designs submitted, and while every care will be taken of drawings, no responsibility is accepted should any loss or damage be sustained. Those desiring their designs returned must send postage to cover cost of same. No award will be made unless at least three designs are sent in for any one competition. Unless otherwise stated drawings are to be in black and white only.

Notice to Subscribers

"N.Z. Building Progress" is posted each month through the G.P.O. at Wellington. If any subscriber should not get his copy, another will be sent him if we are notified in good time. The paper is supplied from year to year only, and if subscribers continue to receive the paper after expiry of the current year, we shall accept it as an intimation of their desire to continue for another twelve months. We undertake to supply the paper for such further term. Notice of discontinuance must be sent to the Manager, 22 Wingfield Street, Wellington in writing, as no Agent has authority to receive notice of discontinuance on our behalf. The subscription is 8/6 per annum. A discount of 1/- will be allowed off this amount if subscription is paid in advance.

DISTINCTIVE PRINTING

:: When you order Printing ::

REMEMBER it costs just the same for paper and ink for the indifferent job as the smart one which attracts attention and brings business.

OUR PRINTING has the distinctive touch of good workmanship. — -- TEST IT!

HARRY H. TOMBS Ltd.
22 Wingfield Street, Wellington

PUBLISHED ANNUALLY.

— THE —

LONDON DIRECTORY**with Provincial & Foreign Sections,**

enables traders to communicate direct with

MANUFACTURERS and DEALERS

in London and in the Provincial Towns and Industrial Centres of the United Kingdom and the Continent of Europe. The names, addresses and other details are classified under more than 2,000 trade headings, including

EXPORT MERCHANTS

with detailed particulars of the Goods shipped and the Colonial and Foreign Markets supplied;

STEAMSHIP LINES

arranged and the Ports to which they sail, and indicating the approximate Sailings.

One-inch BUSINESS CARDS of Firms desiring to extend their connections, or Trade Cards of

DEALERS SEEKING AGENCIES

can be printed at a cost of £1 10s. for each trade heading under which they are inserted. Larger advertisements from £2 to £16.

A copy of the directory will be sent by parcel post for £2, nett cash with order.

THE LONDON DIRECTORY CO., Ltd.

25 Abchurch Lane, London, E.C. 4,
England.

BUSINESS ESTABLISHED 105 YEARS.

**Dominion
Insulators**

**Made in the Dominion
by Dominion Workmen
from Dominion Clay. . .**

Tested and used by Public Works and
City Councils.

Quality equal to imported article .

For Prices and full Particulars apply to

J. A. Redpath & Sons

LIMITED

181 CASHEL ST. - - CHRISTCHURCH N.Z.

HYDRATED LIME.

A new Shipment of the Celebrated

**ANCHOR Brand
Hydrated Finishing Lime**

has arrived.

Makes the strongest lime finish, and with a very small percentage of Plaster of Paris a finish like Keen's Cement can be obtained. This Lime is well known as the finest in the United States, and has been used on all the finest buildings in New York.

TOXEMENT and LIQUID KONKERIT PRIMER and PAINT for preventing or remedying dampness in Brick or Concrete Buildings.

ACID-PROOF TOXEMENT and PAINTS for Mining Plant, Freezing Companies, Dairy Companies (to protect whey and milk tanks corroding).

FRANCIS HOLMES

P.O. BOX 418

OR

248 Lambton Quay
WELLINGTON

P.O. BOX 460

OR

138 Lichfield Street
CHRISTCHURCH

*"Truly an Art that can bring a living individual
before our eyes, is a great Art."*

ENLARGED PORTRAITS of SOLDIERS

BY

BARTLETT

ARE LIFE-LIKE, and in every sense faithful likenesses
of the **ORIGINALS**.

We do not employ Canvassers, so kindly call
or write direct for further particulars—you
will save commissions and get better work.

Only ONE

Address:

W. H. BARTLETT,

Photographer,

QUEEN STREET - AUCKLAND

Mention of "Progress" when writing ensures prompt attention

N.Z. BUILDING PROGRESS

(With which is incorporated "The Scientific New Zealander")

Official Journal of the Dominion Federated Sawmillers' Association (Incorp.)

**A Journal for Progressive men interested in the development of New Zealand's
Architecture, Building, Engineering and Industries**

CHAS. E. WHEELER - Editor

PRICE 9d. per Copy; 8s. 6d. per annum post free.

(Note: 1s. Discount allowed if paid in advance.)

WELLINGTON, AUCKLAND, CHRISTCHURCH, AND DUNEDIN. NEW ZEALAND, SEPTEMBER, 1919.

Contents for September

	Page
Directory	586
Publisher's Announcements	587
Editorial	589
The Pan-Pacific Peace Palace at Hawaii	591
Personal	592
Scarcity of Material	592
Concrete Houses	592
Industries Committee — Housing Proposals	594
How to Light a Picture Theatre....	594
Horahora Hydro-Electric System Bought by the Government from the Waihi Gold Mining Company	597
Real Estate and Garden Suburbs ..	598
British Engineering	599
Here and There	599
Sawmilling Section—Editor's Notes	600
Welfare Co-partnership—Paper by H. Valder, Esq.	601
West Coast Accounting System	602
Extract from Report of Parlia- mentary Industries on Forestry	602
Goats as Road Makers	603
Building Notes	604
Patents	608

Editorial Comment

Housing— Many Suggestions.

Except for the Labour Department's modest building scheme, no practical work is being done at the moment to settle the housing difficulty, but there is a tremendous amount of discussion, and some excellent schemes are in the air. We think that the housing proposals put forward by the Parliamentary Committee which investigated the industries of the Dominion during the recess constitute the most effective recent contribution to the question, and the Committee's report was presented just at a time when politicians were in their most receptive mood. The Committee was representative of all shades of politics, and no doubt is a compromise which could be put through Parliament in the form of legislation. Briefly, the idea is to use the credit of the State to finance housing on a big basis, and that, to a certain extent, the State should subsidise the schemes by granting money at 4 per cent., regardless of the actual interest paid to those who take up Government bonds. As the present rate of interest paid by the State is $4\frac{1}{2}$ per cent., free of income tax, this is quite a substantial concession, especially when compared with what the private borrower would pay in financing his own dwelling—6 per cent. on the average. Quite wisely, the Committee recommends that local authorities should be encouraged to promote housing schemes aided by the State's cheap money, and that the tenants or prospective purchasers should be charged 5 per cent. on capital value, plus rates. They suggest the creation of a National Housing Department, which shall have power to undertake large schemes of housing, and even to run sawmills and other industries associated with building. An amount up to two millions sterling is named, as the capital to inaugurate this housing scheme, and it is estimated by the Committee that three thousand houses, accommodating about fifteen thousand people, would thus be provided. So far, we have not heard what the Government proposes to do in the matter, but the Liberal Opposition has already given voice, Sir Joseph Ward declaring that he has a plan by which a working man may enjoy the privilege of being his own landlord at the modest rate of 10s. 6d. per week. The

Wellington City Council has a housing scheme under consideration, and it is estimated that eighteen five-roomed dwellings in a suburb where land is comparatively cheap will work out at a capital cost of £960 each. On the basis of the suggested five per cent, plus local rates, this would mean a payment of about £1 per week; so that the difference between Sir Joseph Ward's pre-election promises, and actual experience, is considerable. We would be glad to see the ex-Minister of Finance develop his theory, for hard facts give it a visionary colour. We heartily approve the Select Committee's proposals as having a good practical appearance, and a boldness which is in accord with the extent of the problem. Local authorities can better undertake the supervision of schemes than any central authority, which are notoriously slow to move, and for this reason we hope that during the present session Parliament will authorise the financial proposals in the Committee's report, so as to encourage local bodies to go ahead. One important point will to be guarded against, and that is local indifference or hostility. It is obvious that this State-aided scheme is going to compete against the private owner of houses. Capital has not gone into housing of late years, for it has been a poor investment. The cheapening of building by improved financing and large operations will make the difference between the privately-built house and the State-aided enterprise more obvious, and property owners who are holding positions on local authorities may begin to obstruct. Consequently, the requirements of a district may not be supplied. This is where the National Housing Board comes in. If there is legislation this session, we hope it will include a provision similar to that of the English Housing Act, under which the Governmental authority may force a local authority to construct dwellings where it is satisfied that the need exists and the local authority has failed to rise to a sense of its responsibilities in the matter. New Zealand's law could provide for the Housing Department doing the work in default of local action. It will take some time to organise the National Housing Department, and meanwhile local bodies can demonstrate what they can do on their own account, with the encouragement of capital at 4 per cent.

The Declining Sovereign —and a Remedy.

Though a year has passed since the firing of the last gun in the war, there is no real peace in the world, for social unrest has developed to such a widespread extent that the rulers of peoples seem to have only disposed of one great problem, to be faced with another of equally serious import. In our own country, the cry against the profiteer is just as bitter as during the war, and the politicians, on the eve of an appeal to the people, are talking of drastic things as a sign to their electoral masters that they are doing their best. And millions more are being borrowed to clean up war liabilities and settle the soldiers, with the result that the currency is being further inflated, and the values of the sovereign is dropping. The temporary recovery of a fractional character which the Government Statistician was able to show in his cost of living figures a couple of months ago has ceased, and we have almost given up hope of any substantial reduction in prices. When this condition of things is recognised as normal, re-adjustment will take place on the new basis, but this means strife in the industrial

world, and uncertainty on the part of investors. There is a growing feeling that as the currency is at the root of the trouble—profiteering being also an element but not the sole cause—the remedy should not be sought through the rule-of-thumb methods of the politician, but that experts in finance should be brought to the aid of the State to evolve a system of adjusting the basis of payment of wages and every other monetary transaction upon a system which will give a steady and not a fluctuating standard of value. Over forty years ago the famous authority Stanley Jevons, propounded a theory of a tabular standard of value, and he was not the first to think of a system which would aim at making the purchasing power of money uniform. The idea he put forward, to translate it into simple present-day terms, was that if a man's wages were fixed to-day at £3 per week, a permanent commission of qualified authorities should set down the purchasing power of that sum, by reference to a large number of commodities in common use. This statistical work should be constantly maintained and at regular intervals the results should be published, with a comparison of the current prices in relation to those when the £3 bargain was made. If it is found that at a later date, the sum required to purchase what could formerly be bought for £3 is now £4, the wage should be paid in a paper certificate, the value of which is constantly maintained by enabling it to be redeemed in gold bullion of greater or lesser quantity according to the position of the index number of the cost of commodities at the time. To show the working of the principle advocated, we have only quoted a case of wages, but it was suggested that every transaction in which money is involved could be subjected to the same process. It would enter into every relation of debtor and creditor.

The Tabular Standard of Values.

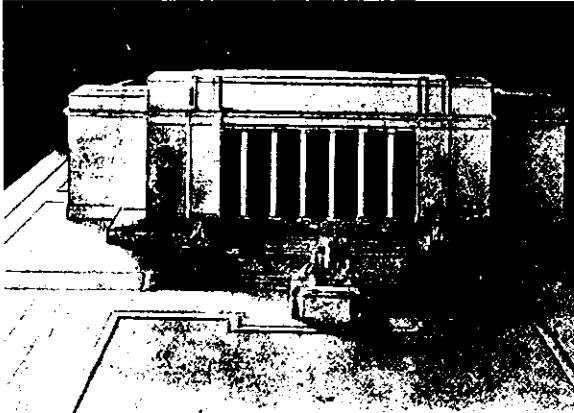
The only difficulty which Jevons foresaw was that of deciding upon the proper method of ascertaining the averages. But since Jevons' time Governments have developed statistical services which are quite capable, with some extension, of covering this important duty. We shall hear more about this new proposal, which after all is not so old. It is therefore worth while quoting Jevons on the advantages which he contended would be secured to people greatly troubled over the mysterious decline in the value of the sovereign: "Such a standard," he wrote, "would add a wholly new degree of stability to social relations, securing the fixed incomes of individuals and public institutions from the depreciation which they have so often suffered. Speculation, too, based the frequent oscillations of prices which take place in the present state of commerce, would be to a certain extent discouraged. The calculations of merchants would be less frequently frustrated by causes beyond their control, and many bankruptcies would be prevented. Periodical collapses of credit would no doubt recur from time to time, but the intensity of the crises would be mitigated, because as prices fell, the liabilities of debtors would decrease approximately in the same ratio." So here we find a doctrine overlooked for forty years, coming back into prominence, with influential advocacy by economists, which may bring into our industrial relations that stability which is so sorely needed.

The Pan-Pacific Peace Palace at Hawaii.

For the great Pan-Pacific Peace Conference to take place in 1920 and 1921, it is proposed to erect a large hall for conference meetings. The Hawaiian legislature has set aside £2000 towards preliminary

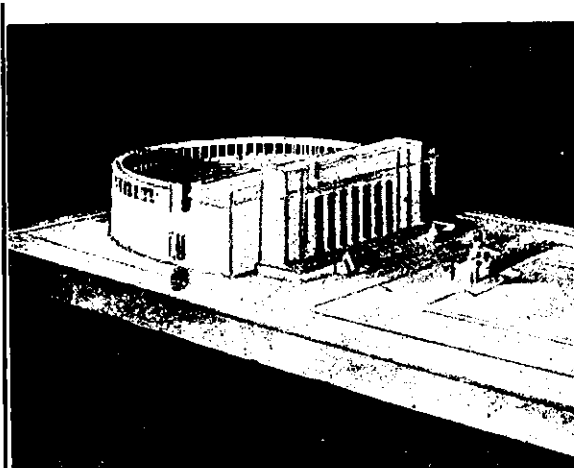
erected in Honolulu. The information bureau will be permanent."

The proposed Peace Palace has been designed by Messrs Dickey and Wood, of Honolulu. It will be a community building, housing not only the Pan-Pacific Union, but many other welfare organisations. It is anticipated that the building will be endowed, so that the Boy Scouts, the Hawaiian organisations, the women's clubs and the soldiers' wel-



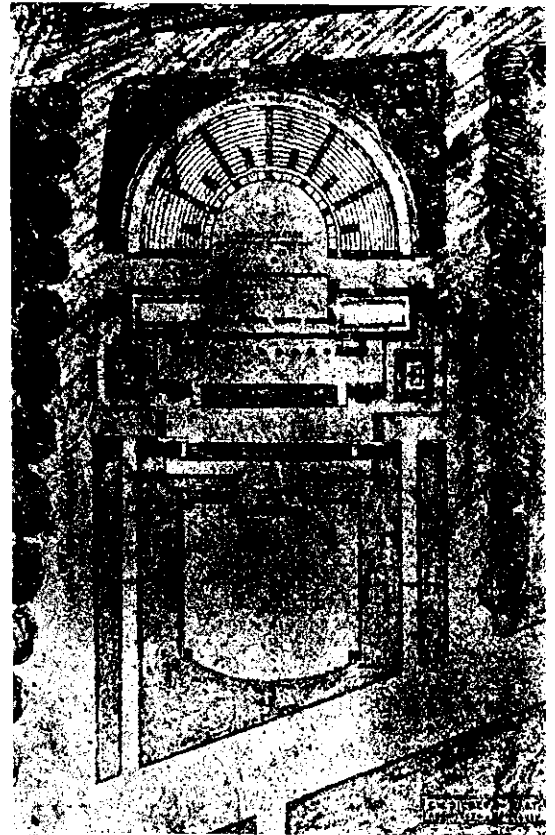
Facade to proposed Pan-Pacific Peace Palace.

any expenses in calling the proposed congress to Honolulu and other Pacific Governments have either appropriated or promised financial support to the scheme.



A Model of the proposed Pan-Pacific Peace Palace in the form of a Greek Theatre.

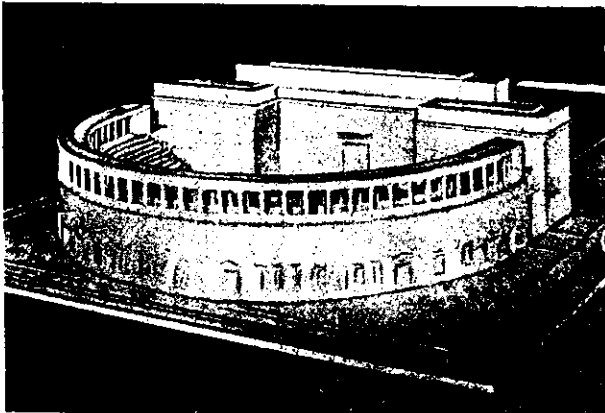
"In the window of the Fort Street headquarters of the Pan-Pacific Information Bureau," says the Honolulu "Commercial Advertiser," "is displayed a big model in plaster of the proposed Pan-Pacific Peace Palace and conference auditorium to be



Grand Plan of the proposed Pan-Pacific Peace Palace, facing the Civic Centre in Honolulu.

fare workers will be given free homes. One of the trustees of the Pan-Pacific Union has already assured a site for the building facing the civic centre and it is believed that governments of the Pacific as well as private capitalists will subscribe liberally toward the building of an auditorium for the holding of the Pan-Pacific conferences, as well as toward a permanent home and offices for the workers who conduct the business of these conferences.

In the meantime a prospectus of the proposed Pan-Pacific Peace Palace is being prepared, for the trustees of the Union are already contributing twice as much toward the work as is appropriated by the Hawaiian legislature. The design for the palace was first suggested as a soldiers' and sailors' memorial. It comprises a Greek theatre that will seat 5000. In front of this is the main building, one wing of which will house a theatre seating 2000, the other a picture gallery and memorial hall and auditorium. Artists' studios will be housed in the upper part of the connecting corridor between the great wings, the main floor of the corridor being reserved for the executive officers of the Pan-Pacific



A Rear View of the Pan-Pacific Palace and Greek Theatre.

Union. Behind this is the big stage before the Greek theatre auditorium. In the ample space beneath the back tiers of seats in the arena will be the headquarters and offices, offered to the useful civic clubs and organisations as well as banquet halls, etc. Above these in a second storey, will be housed the Pan-Pacific Commercial Museum. The facade of the main building will be reflected in a pond of clear spring water. In the basement around the entire block of buildings it is proposed to house permanently the scenic dioramas of Hawaii as well as others of scenes from all Pacific lands.

Personal.

News has been received in Wellington that Captain S. Natusch, M.C., who was recently awarded a New Zealand Expeditionary Force Architectural Scholarship, has passed the associate-ship examination of the Royal Institute of British Architects.

Mr. G. Frost (chairman of the Wellington Technical Education Board) and Mr. John S. Swan (one of the two architects concerned in the preparation of working plans of the new Wellington Technical College) visited Christchurch early this month for the purpose of consulting Mr. J. H. Howell (the new director) on the plans of the proposed building.

Scarcity of Material.

A Hospital Board Contractor Gets 10 per cent. Increase on Contract.

The Architects to Waikato Hospital Board last month advised that the contractors for the nurses' quarters and kitchen block had written stating that they were unable to proceed because they could not obtain material, and they would have to dismiss their men. With regard to material they pointed out that they had been notified of a rise of 9s per ton on cement and 7s 6d per 1000 on bricks, which amounted to practically a 10 per cent. rise. If the contractors had to carry the rise, they stated that it would be impossible for them to continue the contracts, and they would ask the board to release them from the same unless some arrangement could be made to give them some measure of protection. The architects supported the contractors' statements.

The result of this was a special meeting of the Board, and after conferring with its solicitors and the architects, the following resolution was carried:— "That the board grant the contractor an advance not exceeding 10 per cent. on all material on which the architect gives his certificate that the cost has risen as a direct or indirect result of the railway 'cut,' and that the Government's consent be applied for forthwith."

Concrete Houses.

A Sheffield Experiment.

Sheffield can claim to have taken a pioneer part in connexion with the building of concrete houses. Long before the matter attracted attention in the country generally, the concrete method was put to practical test on the outskirts of the city, and the results have been highly satisfactory.

A local landowner has been the principal mover in the experiments, and has erected houses on his estate, two of which have actually been occupied since 1915. The material he uses is composed of seven parts of clinker or boiler ash, and one part of cement, with a binding of sand, and the mixture has been proved to be quite 40 per cent. cheaper than the concrete made of broken brick or stone, cement, and gravel. The cavity-wall system of building is employed, and it is claimed that the houses resist the weather better, and shield the occupants more from the heat of summer and the cold of winter, than do those with solid walls.

The experiments show that a bungalow containing three bed rooms, one sitting room, kitchen, bath room and other conveniences, can be built for £400, as compared with about £700 for a similar structure of brick. One of the experiments consists of the building of 32 houses. Already ten of these, which are in process of erection, have been sold, and there are demands for others even before they are put up. They are built of moulded concrete and the same material is used for the roofs, which are so treated with red ochre as to give them the appearance of being tiled. It is found that concrete houses can be

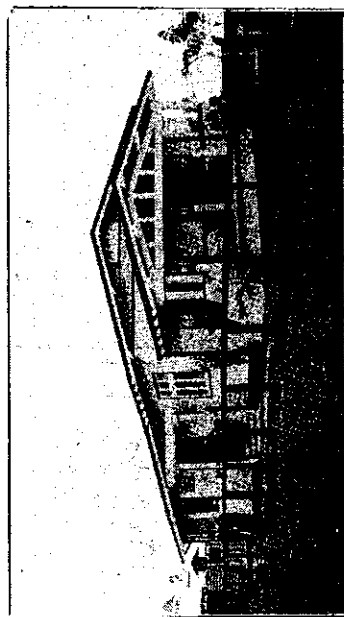


The Sargeant Art Gallery, Wanganui, just completed at a cost of £18,000.

This Gallery, of which the foundation stone was laid by His Excellency the Governor-General, on September, 20th, 1917, has been erected from a bequest in the late Mr. Henry Sargeant's Estate.



An Attractive Stucco Bungalow—Construction of Stucco on metal fabric on wood frame.



"Ideal" Home, Brisbane Town Planning Conference, 1918.

built much more quickly than those of brick. Two men, working under the supervision of a foreman, can build a house in three months, and in another week it can be finished and ready for occupation. The houses have central heating systems, by which the temperature can be graduated according to the season, and there are no fireplaces.

Moulded concrete is also being partially used in the houses which the Corporation are constructing under their three large new schemes. Sheffield was the first city in the country actually to complete all the necessary steps in connexion with one of the post-war housing schemes. Great quantities of bricks have now been delivered on three sites, and the building of houses has begun.

Industries Committee—Housing Proposals

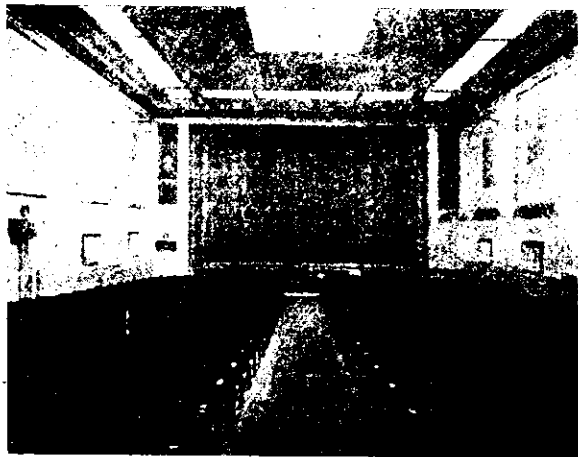
The Industries Committee, which presented its report to Parliament early this month, has evidently given some thought to the Housing question, as their recommendations include the setting up of a National Housing Department with very wide powers. It is proposed to place the Department under a Minister, and administer it by a Commissioner and two associate Commissioners, with power to acquire land and buildings compulsorily, to purchase land, make roads acquire and carry on sawmills and joinery works; to purchase and import supplies, purchase plant, manufacture articles required for the dwellings, etc.; in short, the Commissioners should have wide powers to push on vigorously, and in a business-like way, the work of providing the much-needed houses. Ample funds must be provided, and the Committee recommend that an amount up to £2,000,000 be made available. The sum indicated will provide about 3000 additional houses. The houses provided under the national scheme shall be available for preference to men having incomes below £300 with an additional allowance of £25 per child over three in number.

The Committee further recommend that local bodies, including harbour boards, be empowered, in conjunction with the State, to initiate and carry into effect local housing schemes. It is also recommended that the Government shall lend moneys to approved companies, employers, and farmers under stated conditions. In this case the rent is to be based on 5 per cent. on the cost of the building only, the borrower to bear the loss of maintenance, rates, etc.

The Committee are of opinion that the legislation governing advances to workers requires considerable widening, and recommend:—(a) That the maximum amount of loan that may be advanced be raised to £750, for the purpose of erecting a new building, and to £600 for the purchase of an existing building. (b) That these advances be made to workers whose incomes are not more than £300 per annum, with an addition of £25 for each child up to three in number. The Committee recommend that stringent regulations be drafted to prevent, as far as possible, profit-making by the sale of houses erected under this scheme, and always provided that, in the event of any sale the purchaser must be a worker whose income is within the limitation.

How to Light a Picture Theatre.

The old idea that pictures thrown on a screen by a lantern require a completely darkened room to be clearly seen was shown to be incorrect long before the invention of the moving picture. French experimenters demonstrated that all that was needed was that light from without should not fall directly on the screen itself nor shine into the spectators' eyes. Yet it was some time before the movie-producers realized that their theatres need not be dark. Some are even now too dark for comfort. There is no need for this, since the problems involved have now been completely worked out by illuminating engineers. The requirements and their practical fulfilment are both stated clearly in an article in "The Electrical World" (New York, May 17). Says this paper:—"When lighting problems are considered, auditoriums of photoplay theatres present a condition differing somewhat from that presented by the legitimate theatre because sufficient light must be furnished to permit the audience of the photoplay theatre to find



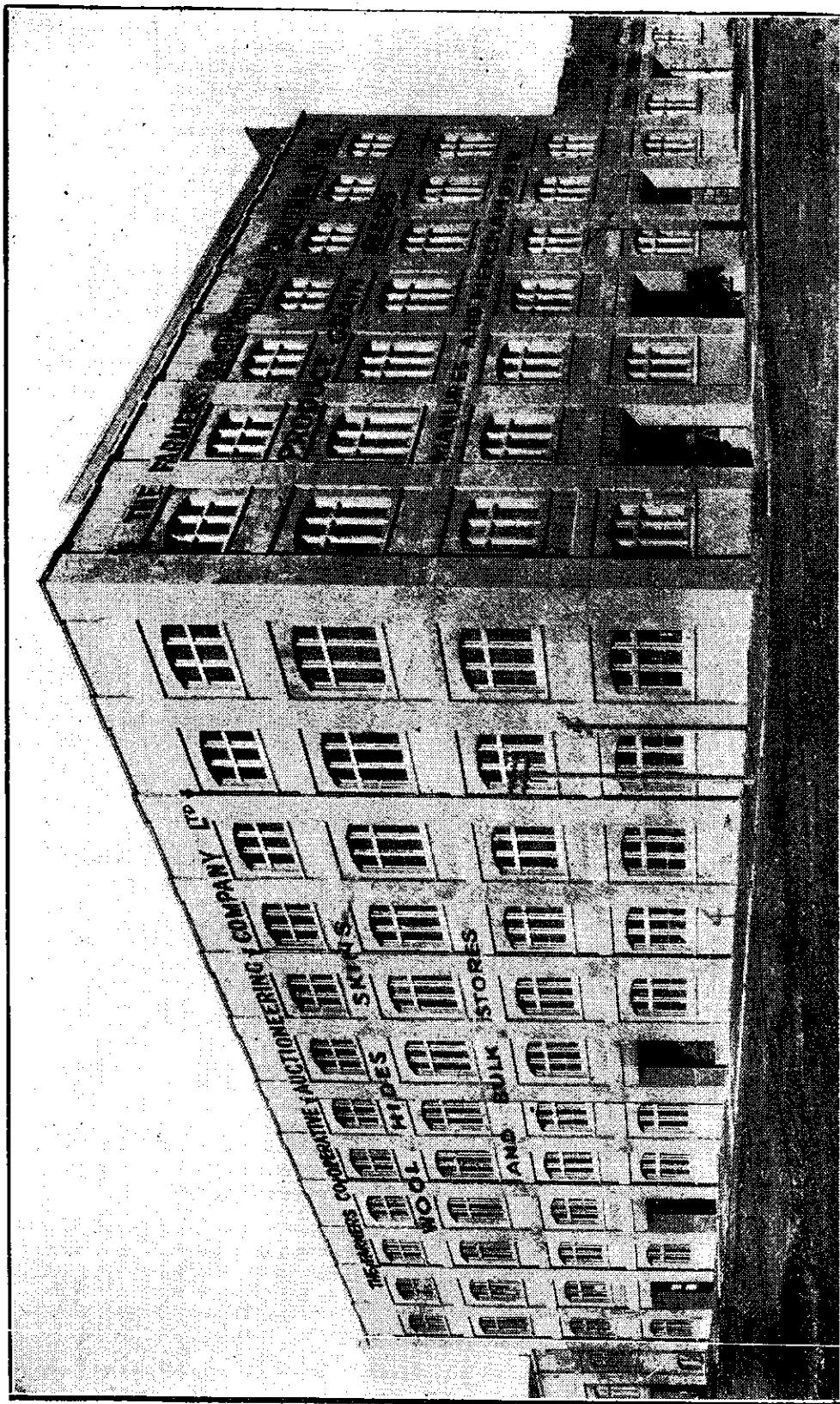
A New Lighting Scheme in an American Theatre, which keeps the screen dark while lighting the seats.

its way about, yet the distribution of this light must be such as not to interfere with the picture on the screen. The intensities in different parts of the theatre may be materially different, since the surface most vitally important is the screen. It is usually quite practicable to raise the illumination in the rear or at the entrance if the motion-picture screen itself is properly submerged in darkness.

"In this way a person entering is not at first subjected to so low an intensity of illumination as he is after passing down toward the front of the theatre. The minute or two which elapses between the time of entering and the time of reaching an area of low illumination gives the eye a certain amount of time in which to accustom itself to the lower intensity.

"A second requirement of this type of lighting is that the greatest amount of illumination should be thrown upon the horizontal plane, that is, the seats and aisles. It is considered poor practise to throw any amount of light on the side-walls because of the effect of reflection toward the screen. Moreover such

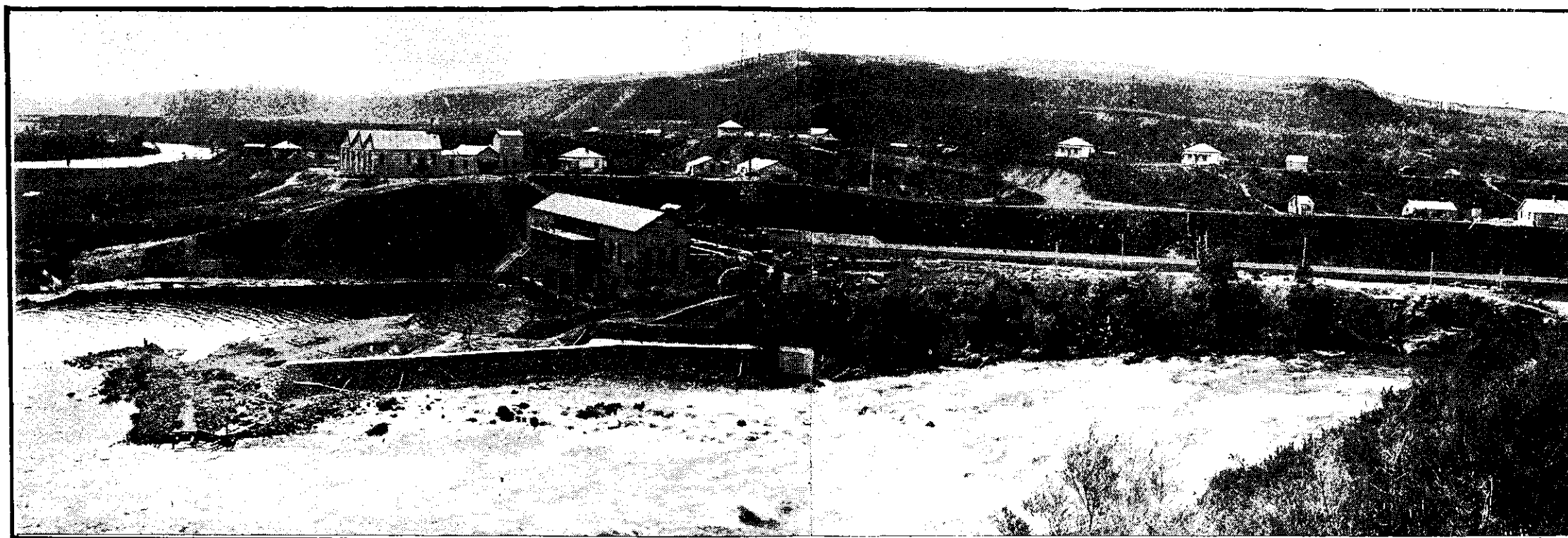
(Continued on Page 598.)



New Premises of the Farmers' Co-operative Auctioneering Company Limited.

This Wool Store, which marks another milestone in the progress of the New Zealand wool industry, has just been erected on the Auckland waterfront by the Farmers' Co-operative Auctioneering Company Ltd. The building is fitted with all the latest labour-saving devices. It is claimed to be the first wool and skin store to be erected in Auckland by a company controlled by farmers.

Horahora Hydro-Electric System Bought by the Government from the Waihi Gold Mining Company.



General View of the Works from across the Waikato River.

Purchased for £212,000.

The Government has come to terms with the Waihi Gold Mining Company for the purchase of the Horahora hydro-electric system.

The arrangement will be that the company will have all the power it requires, and the remaining power will be distributed by the Government for domestic and industrial uses in the towns of the Hauraki district and in urban and rural parts of the Waikato. The price paid by the Government is mentioned as being £212,000.

The Horahora electrical power works, which are situated on the Waikato River, a few miles above Cambridge, were erected by the Waihi Gold Mining Company a few years ago. The sum total expended on the works, according to the company's last published statement, is about £200,000. The present plant is capable of developing about 9000 horse-power. The addition of two more units, it is estimated, would give an additional 3000 horse-power, thus making a total of 12,000 horse-power. The Waihi Company's maximum demand is about 4000 horse-power, thus leaving a

balance of some 8000 horse-power, which will be available for distribution throughout the Waikato and adjacent districts, and as far as Auckland.

The route of a transmission line to Auckland would roughly follow the railway line. Cambridge would be the first town to be served, and Hamilton would be next on the route. The requirements of this growing town, the largest on the line, would at present probably be not more than about 200 horse-power, and it is probable that if 500 horse-power were allocated to it it would serve all its requirements for several years to come. The

smaller townships, of which there are a large number between Hamilton and Auckland, would require correspondingly smaller allocations. The distance of Horahora from Auckland is slightly over 100 miles.

Under the arrangement between the Government and the Waihi Company, which was entered into in 1909 in regard to the utilisation of power from the Horahora Falls, the Company agreed to pay £1000 a year for the concession. The scheme was the first of its kind in the North Island, and the second of any importance in New Zealand. The first large scheme in operation in New Zealand was the Waipori installation near Dunedin.

light serves no useful purpose. The third point to be considered is the elimination of sources of light from the field of vision. In this category fall such items as bracket lamps along the side-walls or lamps on either side of the screen, if the units are low enough to catch the eye. Such lamps not only tend to disturb the eye, but they also produce depression of vision and cause a diversion which detracts attention from the picture.

"As an example of a method by which such lighting can be worked out, an illustration is shown of a lighting installation at Escanaba, Mich. . . . The lighting is effected solely by means of artificial windows in the ceiling. Above these windows are long boxes approximately 18 inches in height, painted white inside. These boxes act as diffusers, throwing the light through the windows into the auditorium. The type of glass used gives very good diffusion and efficiency. The lamps are arranged on three separate circuits, allowing for the use of full intensity, a secondary intensity, or a very low intensity for photoplay work. The lamps on the circuit which give the lowest intensity have been so graded in size as to furnish a very low value of illumination near the front of the theatre and a higher value of illumination near the rear. This type of lighting directs the greater percentage of light to the seats and aisles, where it is needed."

Real Estate and Garden Suburbs.

Why it Pays to Town-Plan.

Interview with Hon. H. N. Barwell, M.P., Australia.

By "Townacre," in "Architecture."

Does the existing practice of subdividing land with straight lines—streets running north and south or east or west—pay the property-owner best? was the first question I put to the Minister for Town-planning (Hon. H. N. Barwell, M.P.) in an interview I had with him recently. Judging by the manner in which South Australian surveyors cling to checkerboard plans in preference to departing from straight lines and right angles," he replied, "the answer is clearly in the affirmative. With few exceptions, recent subdivisional plans in the metropolitan area continue to repeat and add to the vast and ever-spreading network of our straight-line streets, that never seem to depart from the four points of the compass, notwithstanding hot northerly or parching easterly winds, and dustclouds of summer, or again searching southerly and westerly blows and storms of winter. Trams and other traffic, moreover, requiring occasional diagonal routes that save time and money, and facilitate convenience, have no alternative, in these four square districts, to negotiating right angles and dodging corners, thereby covering at least one-third more distance than the more direct routes would have saved. Expenditures in time, petrol, tyres, roads, running and maintenance costs in trams and other public services, multi-

ply accordingly without any corresponding increase in revenue to balance the outlay. From the point of view of the community adherence to checkerboard plans without variation involves waste of public resources and individual wealth. But from the owner's point of view, the question may still be pressed, Does it pay best?"

Money and Value in Residential Amenities.

"In regard to this," he continued, "it might be remarked that visitors from old-world cities sometimes condemn our new suburban streets on the score of ugliness. They declare that they are all the same—wide, dusty, treeless—without character or charm. Be this true or otherwise, it is obvious that the present practice and methods of subdividing suburban land give but little encouragement to more modern methods that seek to encourage and stimulate prices and values by securing first-class residential amenity and attractions. There is a special residential value, for instance, which comes from curving or sequestered streets planned deliberately to minimise dust nuisance, and discourage through traffic thereon once vehicular convenience and transportation have been provided for along more direct routes elsewhere. Whatever this value may represent either to the owner or the purchaser, little or no effort has been made to secure and conserve it in our new suburban districts, where unfortunately at the present time, no matter what the character of the street, shops, boardings, garages, galvanised iron stores, or even factories can be placed at the sweet will of the owner. Townplanning control by legislation is certainly much required in this direction, if for no other reason than to protect properties of established value from depreciation and loss.

"Planning" Pays the Owner.

"If this be a time for economy and conservation of public resources, then clearly our methods of subdividing land require reconsideration. Evidence is not wanting to show that where modern methods of 'planning' are substituted in place of 'subdividing' real estate, the owner gains not only in saleable frontage, but the taxpayer is also benefited by the fact that whilst traffic and communication are better provided for, the community has less length and width of roadway (and public services therein) to construct and maintain, whilst, correspondingly, there are more rateable properties, and therefore more revenue-producing units for the purposes of local government administration. By the occasional use of curves or departures from straight lines it has been clearly proved that more economic and efficient plans for residential subdivisions can be provided. Once owners and agents realise this fact, the expenditure of a few pounds extra to cover the time of the surveyor in laying out the plan on the ground will be willingly incurred for the sake of adding considerably to the revenue obtainable from an increase in selling frontage due to the skilled application of scientific and economic methods of design."

Results that Talk.

Continuing, Mr. Barwell said:—"A case in point was that quoted recently by me, where plans of a proposed subdivision in the district of West Torrens were revised by the department under his charge. The result that in an area of less than 120 acres the selling frontage was increased by over 1,500 ft., while simultaneously five acres were dedicated for parks and open spaces, and, in addition, a site for a new railway station and its approaches. A later instance is that of a garden suburb plan which has been completed recently for one of the suburban districts, and affects another area of 120 acres. The land, as proposed to be subdivided originally, gave a total of 20,597 ft. in selling frontage, without any provision for open spaces or sites for public purpose. In the garden suburb plans the Town Planner has increased the selling frontage to 21,403 ft., notwithstanding that, in addition, 10½ acres (9.5 per cent.) have been dedicated from the total area for school site, public buildings, parks, &c. These plans are private at the present time, but an announcement in connection with the proposed garden suburb will be forthcoming later. They do not refer to those proposed for the Mitcham Garden Suburb, the details of which are, as yet, incomplete.

Adoption of Town-planning Methods by Real Estate Men.

"If the application of townplanning methods to real estate means important financial savings and economies in local government administration, plus a gain to the owner and the community, then clearly every real estate agent should be alive to their importance. This has already occurred in New South Wales, where Mr. Henry Halloran, one of the leading real estate agents in that State, has, during the past two years, wholly abandoned old-fashioned checkerboard methods of 'subdividing' in favour of modern 'planning.' The sale plans of estates issued by his firm show curved as well as straight streets, recreation reserves, sites for public purposes, and a business-like appreciation of the commercial as well as the social importance of townplanning." In conclusion, he said: "Why we should continue to go on manufacturing obsolete types of subdivisions when up-to-date enterprise can show us something better, is inexplicable unless it be that the force of tradition and faith in the world's oldest type of townplan still holds sway in South Australia. It cannot surely be that we adhere to checkerboard plans because they are believed to have been originated by the Chinese many thousands of years ago, when towns and streets had to be laid out in accordance with astronomical laws concerning the movements of the stars, and in conformity with commands direct from the celestial heaven itself? It is more likely that modern owners and agents, whether they revere ancient traditions or otherwise, have not yet fully grasped the true meaning and value of townplanning to those whose business it is to lay out and develop suburban lands to their best economic and social advantage."

British Engineering.

In British Engineering circles there is a marked tendency towards the amalgamation of interests, and the results in many cases are far from favourable to the overseas buyer of engineering products. The latest re-construction scheme however which comes to light, that of the Beardmore-Born concern, is quite free from objectionable features. In recent years Messrs W. Beardmore and Co. have acquired a world wide reputation as manufacturers of armaments and other requirements of the fighting services, and they are now rapidly converting their Clyde workshops from war to peace productions. In order to deal speedily and successfully with the surplus output available for export, they have come to a working arrangement with Messrs John Birch and Co., the well known Export Engineers of London, whereby the latter's organisation for distribution, which extends practically to every part of the world, is placed at their disposal. The organisation thus provided obviates the necessity which would otherwise face Messrs Beardmore and Co. of establishing a similar organisation on their own account in all markets, and brings them into immediate touch with these markets. Incidentally this case proves that the export merchant or middle man is regarded in quarters which ought to know, not as the unworthy encumbrance, he is sometimes represented to be, but as a valuable asset to trade. It is understood that the capital of Messrs John Birch and Co. has been largely increased in order to cover the expansion of business.

Here and There.

In connection with the housing scheme in England, tenders disclosed the fact that a four-roomed cottage could not be built under £850, not counting in the land, which was estimated at £200.

* * * *

The Wellington City Council has decided, in view of the proposals for the erection of dwellings, to immediately consider the erection of municipal brickworks. In the debate it was stated that the council's officers reported it to be cheaper to build in brick than in concrete. Bricks had risen enormously in price and were now quoted at £4 per 1000 and with cartage added the price was brought to £4 15s. or £5. The council would serve a double purpose by making its own bricks. It would secure bricks at a cheaper price and would cause the excavation of a portion of the Town Belt for recreation purposes.

NOT HIS FUNCTION.—"I want to know," said the grim-faced woman, "how much money my husband drew out of the bank last week."

"I can not give you that information, madam," answered the man in the cage.

"You're the paying teller, are'nt you?"

"Yes, but I'm not the telling payer."—*Boston Transcript.*

SAWMILLING SECTION.

[This Section is published by arrangement with the Dominion Federated Sawmillers' Association (Incorp.) in the interests of the Sawmilling Industry of N.Z.]

Editor: W. T. IRVINE.

In another column will be found a reprint of the paper read by Mr. H. Valder at the Annual General Meeting of the Federation held in Wellington recently—the subject matter—Profit Sharing—in the light of the World's unrest and upheaval to-day—together with the demands of the worker for higher wages and better conditions, comes most opportunely; and although it may only touch the fringe of the subject, it is pleasing to note that the Federation is awake to the position, and desirous of making some contribution towards the solution of the problems with which employers are confronted. The basis or ground work of the unrest appears to be the feeling of antagonism exhibited by labour towards the employer, and a rooted belief that the interests of labour and capital are opposed to each other, in place of being interdependent; and until a better understanding is brought about and the relationship of each is shown to be dependent upon the other, we can hardly look for a remedy. Mr. Valder's paper certainly affords food for thought, and suggests a system of profit sharing amongst workers who contribute their labour towards the profits earned by any manufacturing or industrial concern. Some of us may not agree with the low rate of interest he thinks capital should be allowed, in an industrial undertaking, even if regard be had to the reserve rate set aside for unforeseen losses, which would fluctuate in proportion to the risky nature of the business. It is also open to question whether "Welfare shares" should be distributed amongst the employees of a concern, until they had put in a certain length of service, and also whether capital and labour should not divide in equal proportions the excess profit after allowing Capital a fixed rate, and setting aside a further per centage to meet contingencies. But that some such system whereby the worker will have a direct interest beyond his daily wages in the successful conduct of the trade or business he is engaged in, must sooner or later become general—is in our opinion becoming more and more apparent. Direct action by way of strikes, thus lowering production, in the long run hits the worker harder than any other class of the community—but somehow he cannot, or will not see this, and it is only by giving him a direct interest in the profits he assists to create, and by spreading abroad a better knowledge of economics amongst the rising generation of workers, we may hope for a better state of things.

* * *

Attention is drawn to the "Forestry" section of the Parliamentary Industries Committee's Report just presented to the House. The Committee advocates the immediate appointment of a trained Forestry expert—the planting of quick growing trees, suitable

for butter-boxes, cheese crates, and fruit cases—imitation of timber export—the establishment of a Chair of Forestry in one of our Colleges and a Government Seed Store for the supply of forest seeds. From the sawmillers' point of view and the suggested Forestry restrictions it is intended to impose, the recommendation that immediate steps be taken to settle beyond dispute the increment value per acre per annum of timber produced by timber trees in our Native forests, is of great importance, as upon this would probably hinge the restrictions that may be imposed in the future.

* * *

The resumption of the Railway timber traffic has been brought about after nearly two months' suspension, wherein stocks in the town yards have been depleted, and at the country mills correspondingly increased. Several mills had closed down, but if the traffic had not been immediately resumed in part, many more would have followed suit, and so have created wide-spread discontent and unemployment. It is hoped and believed the full services will again be available very shortly.

* * *

The shortage of house accommodation has again been brought before the public prominently and a conference convened by the Wellington Repatriation Board has just been held, at which strong resolutions were passed urging the Government to undertake a house-building programme to meet present needs. One delegate gave it as his opinion 20,000 houses were required throughout the Dominion, and the Industries Committee recommends that a National Housing Dept. should be set up under the charge of a separate Minister of the Crown, and that 2 or 3 business men with a thorough knowledge of the building trade should be appointed Commissioners to act with him. It is further proposed that a sum of £2,000,000 should be made available for this purpose. If it is intended to confine this expenditure to the cities and larger country towns where workers are employed, great care will require to be exercised to avoid running up the value of town allotments and suburban areas suitable for the purpose, which it may be found necessary to purchase.

* * *

The dissolution of the National Government came about suddenly and was a surprise to many who think that Sir Joseph Ward would have acted with greater discretion and with more credit and honor to himself and party, had he elected to remain in the Cabinet and assisted to pass the urgent and necessary legislation required before a dissolution of Parliament can take place. His manifesto to the country is a far-

reaching one, and embraces quite a number of undertakings that must be started whatever Government comes into power. One point worthy of note is the proposal to tax all Government trading concerns on the same basis as private traders, which is of course only fair, and the marvel is that this principle has not held good all along. In recasting taxation it is also proposed to give relief to shareholders in Companies and Co-operative Associations by charging income tax on the income of the individual shareholder, in place of the Company at high Company rates; income on the balance of undivided profits only being payable by the Company. This proposal also would remedy what has long been felt to be a glaring injustice to small shareholders in particular.

* * *

The Prime Minister in a memorandum to the Board of Trade draws attention to the complaints of profiteering throughout the country and urges the Board to investigate and if necessary prosecute parties whom they are able to bring to justice. The definition of "profiteering" is rather obscure, and the Board is set a hard task, but we are in a position to know that splendid work has been accomplished by the Board in regulating prices, and in other directions limiting profits to the advantage of the community, and without unduly harassing the industries concerned.

Welfare Co-Partnership.

Paper read by H. Valder, Esq., Vice-President and Managing Director Ellis and Burnard Ltd., Hamilton, at the Annual General Meeting held in Wellington, 14th August, 1919.

One of the principal causes of unrest in the industrial world is the suspicion on the part of labor—which may or may not be well founded—that capital is taking more than its fair share of the result of their combined efforts, i.e. profits, and if this suspicion could be removed we would be getting a step nearer to the solution of one of the problems that is the cause of world-wide agitation, viz. the strained relationship between capital and labor.

Under the present wage system the share of labor is limited, and the share of capital is unlimited. It is this method of division of profits which causes the suspicion alluded to. Capital of itself has no earning power until put into action by labor. Would it not therefore be a more equitable division of profits if capital's share was limited and labor's share unlimited. This could be brought about by fixing a wage for capital to the same extent that the wage of labor is now fixed by first ascertaining the current rate of interest for money. To this interest should be added what might be termed a "risk" rate to cover the extra risk involved in trading or manufacturing over and above the risk on the best class of securities. This risk rate would vary according to the nature of the business in which the capital is invested, but when ascertained the sum of these two factors would be the wage that capital would be entitled to

draw, and when paid, capital would have no further concern in the division of the profits.

It is not suggested that the wage of capital should rank with that of labor, as the latter will always be a first charge on the joint earnings, but, the wages of labor and capital having been paid, the balance should belong to the active agents alone, in their combined efforts, viz., labor.

This balance, if any, could be dealt with by issuing what may be termed "welfare shares," of which everyone concerned in the production of profit should hold a proportion to the extent to which they influence the earning power of the business.

Welfare shares would be allocated on this basis to every individual employed in the business, including the owner of the capital, if he is employed in it, but not otherwise. The number of shares held by any individual should be subject to variation from time to time, according to the degree to which the holder influenced the earning power of the business. This variation should be determined by a committee set up for the purpose, and if any individual felt aggrieved owing to the adjustment made, there should be a right of appeal to a disinterested party.

Welfare shares would have no capital value, as the title to them would only be good so long as the holder remained in the business. There would be no limit to the number of these shares as this would increase or decrease automatically, according to the number of employees.

The following example will make the intention clear.

A manufacturing company is formed with a capital of £1500. It has ten employees, including the owner of the capital. The product of the company is £3000 per annum, and the wages paid to the employees, including the owner of the capital, average £4 per week. The net profit per annum is estimated to be £317/10/-. The division of this profit would be as follows:—

Current rate of interest on £1500, say 6 per cent.	£90	0	0
Risk rate, say 3 per cent.	45	0	0
1 Owner 100 Welfare Shares	100	£25	0 0
1 Foreman 90	90	22	10 0
5 Journeymen 80	400	100	0 0
2 Improvers 60	120	30	0 0
1 Apprentice 20	20	5	0 0
	730 Shares at 5/-	182	10 0
		£317	10 0

Thus the owner of the capital would get the wage of his capital and the dividend on his welfare shares, and the other employees would get the dividends on their welfare shares which, in this instance, would be nearly 9 per cent on their wages, and the dividends would rise or fall according to the efforts of the employees.

This scheme would have the effect of putting capital on a much sounder basis than at present, as labor would then have every incentive, (which it has not now), to earn more than sufficient to pay the wage of capital, in order to benefit under the welfare shares, and it would therefore appear that increased production would also result.

It would be advisable to carry to reserve a part of the dividend payable on the welfare shares, so that in course of time the holders of these shares, i.e., all the employees, would gradually also become part owners of the capital on which they would draw the interest and risk rate.

The division of the welfare shares need not of course necessarily be in the proportion stated in the example, but this would be a detail for the owner and the employees to mutually agree on before entering into the scheme. For instance, an owner might stipulate that he, being the founder, should be entitled to half or any large proportion of the welfare shares so long as he was an active worker in the business, and it is quite possible that this might be an equitable arrangement that the employees would agree to.

The welfare shares could also be used to make the scheme co-operative, as it would be quite possible to distribute the shares to customers on the basis of their purchases over a given period.

Provision would also have to be made for employees leaving or being discharged, but these and many other essential details would have to be thought out by the parties concerned.

The principal features of the scheme outlined are, firstly, that the wage of capital would be fixed subject to certain fluctuating conditions, secondly, that the division of the profit after paying the wage of capital would be on a variable basis, and thirdly, it would do away with the suspicion that capital was getting more than its share of the profit, and thus tend to a more harmonious working of capital and labour.

H. VALDER.

[Mr. Valder invites constructive criticism of the above paper, but desires that all remarks be summarised to save time and enable him to make a concise reply.]

W. T. IRVINE, Secretary.]

The West Coast Accounting System.

The West Coast Lumbermen's Association uniform cost accounting system which has been in course of preparation for three or four months, is completed and the prospectus is being distributed among the mills. The prospectus covers 225 pages of a neatly bound book and includes 24 full-page diagrams showing the type of blank forms. It contains instructions for the use of every form; it provides for the entry of every possible form of transaction.

The system sets up logging as a distinct operation. Each mill, whether it cuts its own logs or buys them in the open market, is expected to handle the logging end of its operation as a separate unit, capable of earning an independent profit. Thus it will be possible to segregate the profits and losses between the logging end of the business and the milling end.

Underweight returns are treated separately from the returns on f.o.b. sales. Shipping is carried as an item of cost independent of manufacturing. In-

terest and discount are to be charged or credited to capital account rather than to the operating account.

The system provides for the following major classification of accounts: Assets, liabilities, capital, revenue, purchases, controls, which latter item includes labour, supplies, expenses and repairs.

Use of this system will enable the average mill office to dispense with a lot of unnecessary books and bookkeeping; even the largest operation can handle all its accounts in two or three books.

With this system in general use the members of the West Coast Lumbermen's Association will know exactly what their costs are, per unit, and can regulate their merchandising so that it will not be possible to sell below cost of production, and, in case of an upward swing on a rising market, so that lumber will not be the last of the staple commodities to advance.

It will be easy, under this system, for any operation to determine its correct profits for the purpose of making income tax and excess profits tax payments. As all forms to be used in operating the system will be uniform for all the mills, the association proposes to lay in a store of blank supplies and to furnish them to the mills.

Extract from Report of Parliamentary Industries Committee on Forestry.

The committee makes the following recommendations on forestry:—

(1) That there shall be established a Department of Forestry, which will be separate from and not subsidiary to any other Department of State, and that it shall be the duty of that Department to determine what lands shall be permanently set aside as forest reserves; also that provision be made ensuring continuity and permanency of policy for definite periods of years, as has been done in New South Wales.

(2) That at the earliest moment a scientifically trained expert shall be appointed as Chief Forester; that one of his first duties shall be to determine for the whole of New Zealand what Crown lands, whether bush or open land, shall be set apart for forest reserves; and, further, where necessary and in districts where insufficient Crown lands are available, he shall recommend the resumption of areas of private land for the above purpose. Land once reserved for forest purposes shall be inalienable for any other purpose, except by Act of Parliament. The committee recognises that once the forester is appointed other reforms will follow, including the organisation of the Department.

(3) That immediate steps be taken to bring about a great speeding-up in the planting of quick-growing exotic trees, especially those suitable for butter boxes, cheese crates, and fruit and other packing cases. Wherever practicable these trees should be planted near consuming centres.

(4) Owing to the diversity of opinion that exists as to the rate of growth of our native trees, it is

important that immediate steps be taken to settle beyond dispute what is the increment volume per acre per annum of timber produced by the timber trees in our native forests growing under forest conditions.

(5) Referring to the export timber, and having regard to the conditions already referred to under which this country may before many years be dependent on foreign supplies, the placing of restrictions upon export is regarded as an imperative necessity.

(6) While the making of adequate provision for our future timber-supplies is of the utmost importance, other aspects of forestry should not be overlooked. One of these aspects is water and stream-flow conservation. It is therefore recommended that lands at the head of and forming the catchment areas of rivers should be permanently reserved as forest areas in order to assist in preventing erosion and flooding, and at the same time conserving the flow of water for all purposes. It is also recommended that our forest policy of the future should include planting for climatic reasons, more particularly in the larger valleys or gullies which penetrate our mountain ranges in the driest areas of the Dominion.

(7) That as soon as practicable a Chair of Forestry be established in one of the university colleges. In this connection the committee is pleased to note that the late Mr. T. W. Adams, of Greendale, Canterbury, has left a handsome bequest to the Board of Governors of Canterbury College towards the establishment of a school of forestry in connection with that institution.

(8) That in order to encourage local bodies particularly to afforest catchment areas in connection with their water supplies, and provide at the same time timber suitable for general requirements, financial assistance by way of subsidy, based on the acreage planted, should be given to local authorities for the planting of trees approved by the Forestry Department.

(9) That a seed store for the supply of forest seeds true to name and of the most approved varieties, as promised by the Government more than a year ago, be established without further delay.

(10) That efforts should be made to educate public opinion as to the value of forests, and the necessity of preserving them from destruction by fire; and with that object the Forestry Department should undertake propaganda work by means of notices in public places, bulletins, and illustrated lectures, while educative work should be done in the public schools.

Goats as Road Makers.

An American Scheme.

In the forests of California the United States Government are employing many thousands of goats on road-making. For miles into the forests the animals are slowly marching in regular order, and leaving behind them enchanting avenues—broad, smooth, and perfectly straight. The idea of thus employ-

ing goats is not a new one. As a matter of fact, it is a revival of a custom dated from long centuries ago.

The plan is adopted by the United States' Government is simple. The herdsman cuts a pathway just wide enough to admit himself, with a goat following at his heels. The pathway is cut for a distance of 12 yards, and the iron peg at the end of the chain is driven into the ground, and it is the duty of the goat to make a clean sweep of all undergrowth as far as its tether will permit, by the practical method of eating it. The goat is not moved until it has done its job well and thoroughly. When one goat is tethered the pathway is extended a further 12 yards and another goat is "stumped," and so it goes on, until there is a line, miles in length, of busy, nibbling, happy goats—or rather several lines, for the avenues are from a hundred to four hundred yards wide. Herdsmen are continually passing along the lines, untangling chains and in other respects looking to the comfort of their charges, and night and morning the goats are milked. Bonnie milkmaids, with buckets and stools, pour out of log cabins, and presently they are scrambling back to their romantic habitations with big churns of rich milk, which in due course they will convert into delicious little cheeses, for which there is an insatiable demand.

The breed of goat employed is the extravagantly-coated Angora, and the venture is returning a very handsome profit. There is the yield of wool, which is considerable and of great value, then the yield of milk, and finally the progeny. When the undergrowth has all been cleared away the big timber is felled and taken off through the splendid avenues. In this way immense tracts of forest are being isolated and burnt, and thousands of acres made ready for the plough or for a crop of young timber. Without the help of the sharp teeth and the healthy appetites of the goats, preparations for burning, it is said, would be so costly that the job would hardly be worth while. The animals enjoy the varied fare; it is their natural food.—[The above appears to follow up Mr Hutchins'—the forestry expert ideas. Ed.]

WORKERS' DWELLINGS.

The Public Works Department, is calling for tenders for dwellings as follows:—Wellington, 60; Auckland, 17; Christchurch, 12; Dunedin, 2; Fielding, 2; Hamilton, 4; Hawera, 10; Hmily, 1; Invercargill, 4; Marton, 2; Masterton, 8; Napier, 4; Nelson, 4; New Plymouth, 15; Oamaru, 8; Petone, 15; Palmerston North, 10; Te Aroha, 6; Timaru, 3; Wanganui, 10. Tenders will also probably be called shortly for dwellings at Taihape, Te Kuiti, Winton, Morrinsville, and Otterohanga.

Builders are asked to submit tenders on the Department's two designs and specifications: (a) in monolithic reinforced concrete construction; or (b) in any other similar method of construction; or (c) in brick construction, as described in the "Form of Tender;" or they may submit their own designs and specifications. Special consideration will be given to concrete construction. Tenders will be received up to the 30th day of September, 1919. The Department's plans and specifications of the two designs (numbered 24 and 25), also Form of Tender and all particulars respecting the whole of the dwellings, can be obtained at the Department's Offices (the Inspector of Factories) in any of the abovenamed towns.

CLASSIFIED ADVERTISING

Advertisements accepted under this heading cannot be displayed, but are set solid in 8 point type.

Rates: One penny per word per insertion. 10% reduction for 3 consecutive insertions, 15% for 6, and 20% for 12 insertions. Minimum charge 2/6 per insertion.

The purpose of this department is to put the reader in touch with advertisers who offer the latest needs for Home, Office or Factory and to place prospective employers and employees in touch with one another.

Advertising

The classified columns offer the small advertiser an opportunity to place his name before our readers at an exceptionally low cost. Send in your advertisement to-day so that it can appear in our next issue.

Glass Merchants, &c.

Arthur L. Hill, wholesale and retail Glass Merchant, Lead-light Manufacturer and Glazier. Plain and ornamental glass stocked. Estimates and Designs submitted for all classes of Leaded lights. Enquiries solicited. Address: 11 Ghuznee Street, Wellington.

Locks and Keys

Arthur J. Wycherley, Lock and Key Specialist, cuts keys to any pattern. Safe and Post Office Box Keys promptly duplicated. Every description of Locksmith's Work thoroughly entered for. Mail orders receive prompt and careful attention. Address: King's Chambers, Wellington. Phone 568. P.O. Box 645.

"Progress" will be pleased to have its friends contribute from time to time, their experiences. If you have any new ideas, or old ones for that matter, they will be welcomed. Let us hear from you.

—EDITOR.

Building Notes.

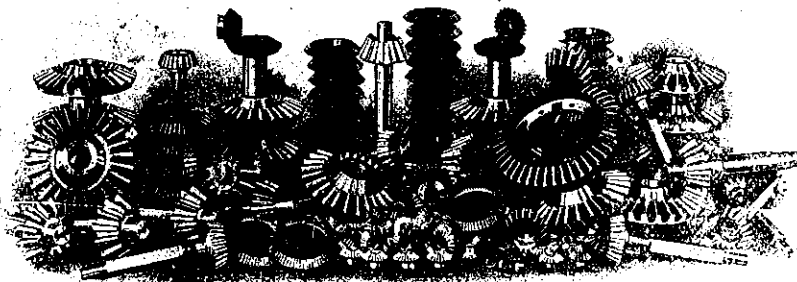
AUCKLAND.

The Auckland Soldiers Club has purchased a piece of land valued at £12,500 at the corner of Albert and Swanson Streets, on which stands a brick building, which is to be converted into a Soldiers' Club. The plans are being prepared by a returned soldier, Mr. K. W. Aimer. The club will contain a luncheon-room capable of seating 100 persons, a billiard-room with sufficient space for four tables, as well as a lounge, and smoking, reading, writing, and committee rooms. There also will be bedroom accommodation for not fewer than fifty men, bathrooms and offices for the secretary, staff, and the executive of the Returned Soldiers' Association, as well as caretaker's quarters. It has a frontage of 51ft. to Albert Street, and of 52ft. to Swanson Street.

During the month the following tenders were advertised: Messrs Chilwell and Trevithick for a bungalow at Te Kawa. Mr. J. Currie, erection of cottage, Campbell Road; Mr. Norman Wade, for bungalow Campbell Road, and business premises in brick at Hamilton; Messrs Holman and Moses, for an iron store in brick in Stanley Street. The Public Works Department also called for tenders for automatic telephone exchange at Devonport and Takapuna. Mr. M. M. Milliken called for tenders for the erection of a reinforced concrete and brick building in Stanley Street for Pomeroy and Co., motor factors.

It is expected that the erection of the proposed new St. David's Presbyterian Church, as a soldiers' memorial, will, on account of the great demand for increased accommodation by the Sunday school and Bible classes, have to be taken in hand in the near future.

The demolition of the Shortland Street block of Hobson Building has commenced, preparatory to the erection on the same site of a new five storey structure for the National Bank of New Zealand. When the new structure has been



SAWMILLERS' & ENGINEERS' SUPPLIES.

WE STOCK:

Saws, Files, Swages & Emery Wheels
Disston's and Atkins' Circular and Crosscut Saws,
in all sizes and gauges.

GEARING and GEAR CUTTING A SPECIALTY.

Importers of Hardware, Machinery and Motor Accessories.
Mail Orders promptly attended to.

ALEXANDER ROSS & Co.

Saw and Tool Manufacturers and General Engineers,
HALLEY'S LANE (off Taranaki St.)
WELLINGTON.

BRADLEY BROS
FORLeadlights & Stained
Glass Windows

782, COLOMBO STREET, CHRISTCHURCH

Wherever you are it will pay you to get particulars of our work



completed the bank will occupy the ground floor, and the whole of the basement right through.

Mr. Daniel B. Patterson called for tenders for students' block and warden's house for St. John's College, Tamaki.

CHRISTCHURCH.

A new wing to the Sydenham school was opened early last month consisting of four classrooms, master's room, library, or museum, with ample corridor space. This section of the building, which will accommodate about 220 children, forms practically a quarter of the new school as it will be when finished. The completed school will contain sixteen class rooms with master's room, library, medical inspector's room, teachers' common room, kitchenette, and two staircases with extensive corridor space. This does not include the present cookery and woodwork rooms which adjoin the new school. The future additions will be added to the southern end of the present building, and with this end in view this part of the building has been finished temporarily with galvanised iron. The ground in front of the building will be asphalted up to the street, where a low red stone rubble wall will be erected. The new school is heated with steam pipes, installed by the Challenge heating system under the supervision of Mr. Ponninghouse. The tests of the heating apparatus have proved satisfactory, and it is expected that the rooms will be heated comfortably at a moderate expenditure on fuel. The school is well lighted and ventilated, and is considered to be the most up-to-date erected in the Canterbury district. Proper provision has been made for fire escapes, but as the walls are all brick, and the only fire is in the boiler-room, which is of concrete, there should be little risk of the building catching fire. The contractor for the section of the building just completed was Mr. H. Hinkey, the contract price being £3369, without furniture. This does not include the heating, which cost £320. The building was designed by the Board's architect, Mr. G. Penlington, and erected under his supervision, and that of the Board's foreman, Mr. B. Riley.

ROBERTS' SALAMANDER RANGES

USED BY
N.Z. RAILWAYS, AUSTRALIAN & NEW
ZEALAND DEFENCE DEPARTMENTS,
HOSPITALS and HOTELS.

**Makers of Electrical Ovens, Irons,
Electrical Caliphonts,
Toasters, Grillers**
Any Voltage.

ROBERTS'
Iron, Steel and Oven Works,
93 MANNERS STREET,
WELLINGTON, N.Z.

Circular Saws !

Experience has proved the following
makes of Saws the BEST :

SANDERSON BROS. & NEWBOULD LTD.,
Sheffield

E. C. ATKINS & Co., Indianapolis.

SILVER STEEL.

Saws in stock for all purposes, in all sizes
and gauges.

Write for Stock and Price List.
Every Saw carries our **Guarantee.**

**We specialise in Circular Saw Repairs,
Gulletting and Hammering.**

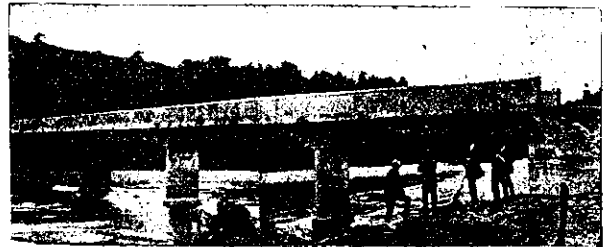
Alex. McMillan Ltd.

**OIL & MACHINERY MERCHANTS
and SAWMILL SUPPLIES**

Herbert Street - WELLINGTON

W. A. CHOTE LTD.

FARISH STREET " " WELLINGTON
PHONE 763



Victoria Bridge, Moonshine, Upper Hutt.

BUILT WITH REINFORCED CONCRETE

Another Everlasting Monument to
the SUPERIOR QUALITIES of

Golden Bay Cement

Also Agents for:—MILBURN LIME, J. J. CRAIG'S HYDRAULIC LIME,
BRUNNER FIRE BRICKS, FIRE TILES & FIRE CLAY CHIMNEY POTS,
DRAIN PIPES.

Messrs England Bros. called for tenders last month for the erection of a warehouse in Lichfield Street. Messrs Collins and Harman also called for tenders for the erection of a curator's house for the Domain Board, as well as an Isolation Ward for the Kaikoura Hospital, and a house in Holmwood Road. Messrs J. S. and M. J. Guthrie called for tenders for a new Catholic Church in brick and additions to school, as well as a new building in Gloucester Street for Soldiers' Club. Mr. Cecil Wood called for tenders for the erection of laboratories and class-rooms, Christ's College, and Messrs Hart and Reese for extensions to Messrs Stacey and Hawker's bakery. Mr. Roy Lovell-Smith called for tenders for new Methodist Church in brick or stone, Lincoln Road, Spreydon.

Plans and specifications are being prepared for a new school at St. Mary's Manchester Street. It will cost between £4000 and £5000.

DUNEDIN.

Mr. E. W. Walden called for tenders for the erection of stores and offices for McGavin and Co., and Messrs Mason and Wales invited tenders for an isolation ward at the Tapanui Hospital.

HAMILTON.

It is proposed to erect an annexe to the hospital at Hamilton, costing £10,000 as a memorial, that will be of some direct benefit to the community.

HOKITIKA.

At a meeting of the trustees of the Hokitika Savings Bank recently, £1000 was voted towards a new wing and nurses' quarters at Westland Hospital, to mark the conclusion of peace. The building scheme involves the expenditure of about £12,500 for partial completion, and an additional £8000 for full completion. The board is now arranging to undertake the work as soon as the plans now in hand are prepared.

NAPIER.

A tender of £15,500 has been accepted for the erection of the new main school at Napier.

NELSON.

Mr. W. Houliker invited tenders last month for a new Anglican church at Motupi.

RANGIORA.

The Secretary, Board of Governors, High School, Rangiora, called for tenders for the erection of a new school in brick during this month.

TIMARU.

Messrs Turnbull and Rule advertised for tenders for hostel for Girls' High School.

WAITAKI.

The Board of Governors of the Waitaki Boys' High School decided to contribute £1000 towards the cost of a memorial hall to commemorate the old boys who gave their lives in the war, the contribution to the subject to the approval of the Minister. It is contemplated that £10,000 will be raised for the purpose, towards which the staff and pupils have already undertaken to provide £1000.

WELLINGTON.

In connection with the Wellington Gas Company's proposed housing scheme at Miramar, the following two circulars have been issued to the employees of the company by Mr. Archibald Deugall, engineer:—

"The directors of the Wellington Gas Company, Limited, recently purchased at Miramar twelve and a half acres of land suitable for building houses upon, and, before any steps are taken in connection with the development of the scheme, it is the desire of the board to consult its employees in the matter. I therefore am instructed to form a committee from the employees with whom the board may consult, and in order to do this it will be necessary for each

LIFTS

There are many Points of Superiority in the High-grade Lifts for

PASSENGERS or GOODS

Made by

A. & P. STEVEN, Provanside Engine Works, GLASGOW

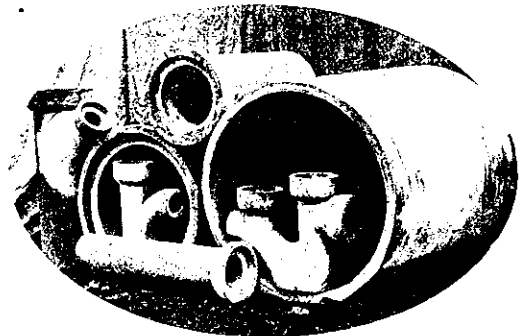
whose equipment has an enviable reputation for Reliability and Efficiency. Installed for H.M. the King, the Admiralty, Glasgow Corporation, and many other users who insist on the best obtainable.

Further information, Catalogues and Quotations from the Sole Agents:

TOLLEY & SON, LTD.

CHEWS LANE, WELLINGTON

— P.O. Box 665. —



CEMENT PIPES

have proved the best for SEWAGE and ROAD CULVERTS. In sizes from 4 inches to 42 inches in diameter. STRONG and EVERLASTING. Improve with age. We make Concrete Posts and Strainers, Pig Troughs, Salt Pans, Garden Rollers, Flags, etc., etc. Factories: Masterton, Hastings, and Waitara. Full particulars—

The Cement Pipe Co., Ltd., Masterton.

Brunner Fireclay Goods

Have gained the highest possible awards at all important exhibitions held in Australasia during the last 40 years, and are used in nearly all of the large works throughout New Zealand. To ensure satisfaction specify—

BRUNNER

The Tyneside Proprietary Ltd.

Owners Brunner Collieries & Works,

UNION CHAMBERS, WELLINGTON

department to elect a representative to the committee. The representatives required are:—Miramar—From the retort house, one representative; from the workshops, one; from the yard, one. Town—From the mechanics and meter shops (Cambridge Terrace), one representative; from the gas fitters and service layers, one; from the clerical staff, one; and one foreman representative, to be elected by the other foremen. I shall be glad to receive the names of the representatives to form the committee on or before Saturday, July 12.

"It is proposed to erect permanent buildings in brick and concrete at as low a cost as possible, but with good workmanship, so that the rents, to be based on the cost, also may be as low as possible. The company does not desire to make any profit on the letting of the houses. The committee is required to assist in the general planning of the scheme, so that houses suitable for the wants of the employees will be erected. Among other objects is the desirableness of building semi-detached houses or groups of houses in a block. The committee is to ascertain whether a laundry of the kind usually erected with a group of houses would meet with approval, also the number of employees desirous of becoming tenants; and when the scheme is floated the committee will be required to assist in the supervision and management of the settlement. At a further advanced stage it may be of assistance for some of the wives of the employees to be added to the committee to give advice on the internal arrangement of the houses. It is the intention of the directors to acquire a recreation ground in the neighbourhood of the settlement. Generally, the object of the directors is to provide for the employees of the company suitable houses in pleasant surroundings in the vicinity of the works, and at a reasonable rent. At the same time the scheme is open to every employee of the company."

The Wellington Harbour Board invited tenders for the construction of Pipitea Wharf in re-inforced concrete.

NEW ZEALAND INSTITUTE OF ARCHITECTS (INCORPORATED)

EXAMINATIONS, 1919
9th to 12th DECEMBER, 1919 (inclusive)

INTENDING CANDIDATES are notified that Entries for the Institute's "Intermediate" Examination close with the Secretary, G.P.O. Box 772, Wellington, on the 9th day of OCTOBER, 1919, at 5 p.m.

Forms of Entry, copies of the Syllabus, and the Time-table may be obtained on application to the Secretary, as above, or from any of the District Secretaries.

By order of the Education Committee.

W. BEAUCHAMP-PLATTS, Secretary
Wellington, 23rd August, 1919.

PHONE 1649.

F. de J. Clere

F.R.I.B.A., M.C.I., LOND.

Stewart E. Williams

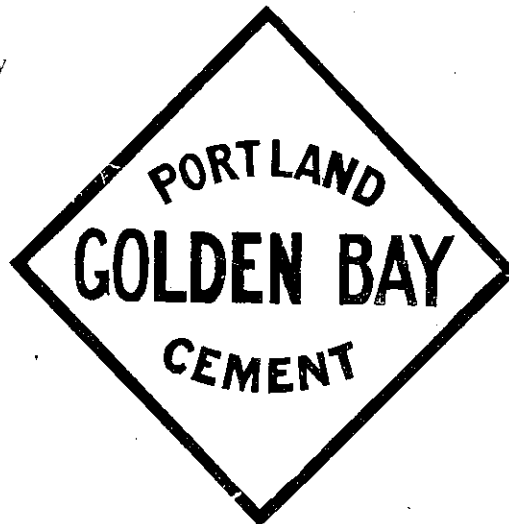
A.R.I.B.A., M.C.I., LOND.

CLERE & WILLIAMS,
ARCHITECTS AND STRUCTURAL ENGINEERS,
157 FEATHERSTON STREET,
WELLINGTON, N.Z.

GOLDEN BAY CEMENT

Universally
Used.

Tested under every
working condition.



Sets like a
Rock.

Quality proved
by results.

THE GOLDEN BAY CEMENT WORKS, LTD.

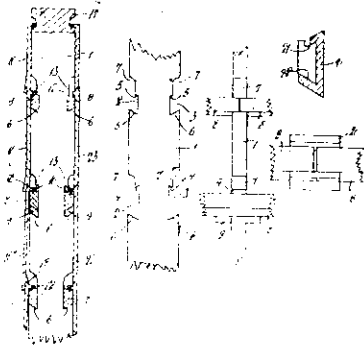
Nathan's Buildings, Wellington.

REESE BROS.

CANTERBURY AGENTS

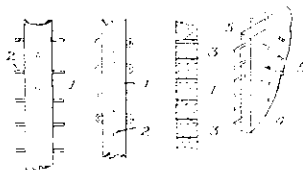
Patents of Interest to Builders.

Building Construction—Mr. R. W. de Montalk has taken out a patent (No. 41400) which relates to the construction of buildings, and provides a construction in which parts made of concrete are united without the use of mortar or cement, so that a building can be dismantled and re-erected upon a different site. The invention consists in the combination with studs having means of retaining horizon-



tal members, or approximately horizontal members, of covering-members which form the exterior and interior facings of a wall, the covering-members having flanges or ribs whereby the same are affixed by means of pins passing through the flanges or ribs to engage grooves formed in the horizontal members. The horizontal members may be battens, beams, or the like, and the covering-members may be sheets, boards, tiles or the like.

Concrete Building Construction—Another patent, No. 41509, has been taken out by Mr. de Montalk, for concrete building construction. According to the invention, the framing parts, also the slabs or the blocks employed, are made with projecting metal rods, wires, loops, or meshing, and with or without perforations therein whereby any two or more parts can be secured together. Also rafters and other framing-parts are formed with holes in their faces, to take dowels.



pins, wedges, or the like for holding any other part or parts in position. Other features consist in providing specially formed angle floor and roof pieces, rebated and (or) tongued and grooved for fitting together, extensible framing-parts, a rafter and ridge holder, flashings for chimneys and the like, ties, gutters, valleys, and downpipes, all moulded in concrete so as to facilitate their being placed and secured in position.

Concrete Roads, Floors, Etc.—John Wilson, of Remuera, Auckland, has taken out a patent, No. 49278 for an invention which has for its object the facilitating repair of roads. A foundation is made of concrete in the ordinary way. A course comprising material weaker than concrete is laid upon the base or foundation. The weaker material must be of such a nature that upon removal of the wearing-surface the weaker material will come away without damaging or disturbing the base or foundation. The wearing-surface is finally laid upon the course of weaker material. The course weaker than concrete consists of one part of well-seasoned finely ground hydraulic lime and not more than two parts of good clear sand. These ingredients are mixed together, and then water is added until the mixture is sufficiently plastic to be applied by a broom upon the surface of the concrete base of the road or floor.

MALTHOID ROOFING

Copes with Severest Weather Conditions.

THE many users of MALTHOID are unanimous in their appreciation of this weather-proof, spark-proof and wear-resisting roofing; therefore, is it any wonder that MALTHOID is the most popular roofing to-day? We are positive that it will satisfy you from a service point of view, and also from an economical standpoint.

Malthoid often outlasts the building it covers, and contains no fish oil or animal fat disguised in tar. MALTHOID is a splendid fire-resistant.

Call for further particulars!

AUBREY GUALTER & Co.

Featherston Street
Wellington

McCarthy's Family Hotel

Taupo Quay,
WANGANUI

C. J. MCCARTHY, PROPRIETOR

Steel Constructional Work for Architects, Contractors, Etc.

Joists, Beams, Stanchions, Compound Girders,
Solid Steel Columns, Steel Roof Trusses,
Galvanised Roofing Iron, Ridging, Spouting,
— Downpipes, etc. —

Full stocks. Quick deliveries.

A. & T. BURT, LTD.

Auckland, Wellington, Christchurch, Timaru,
Dunedin, Invercargill.

London Office: Eldon St. House, E.C.