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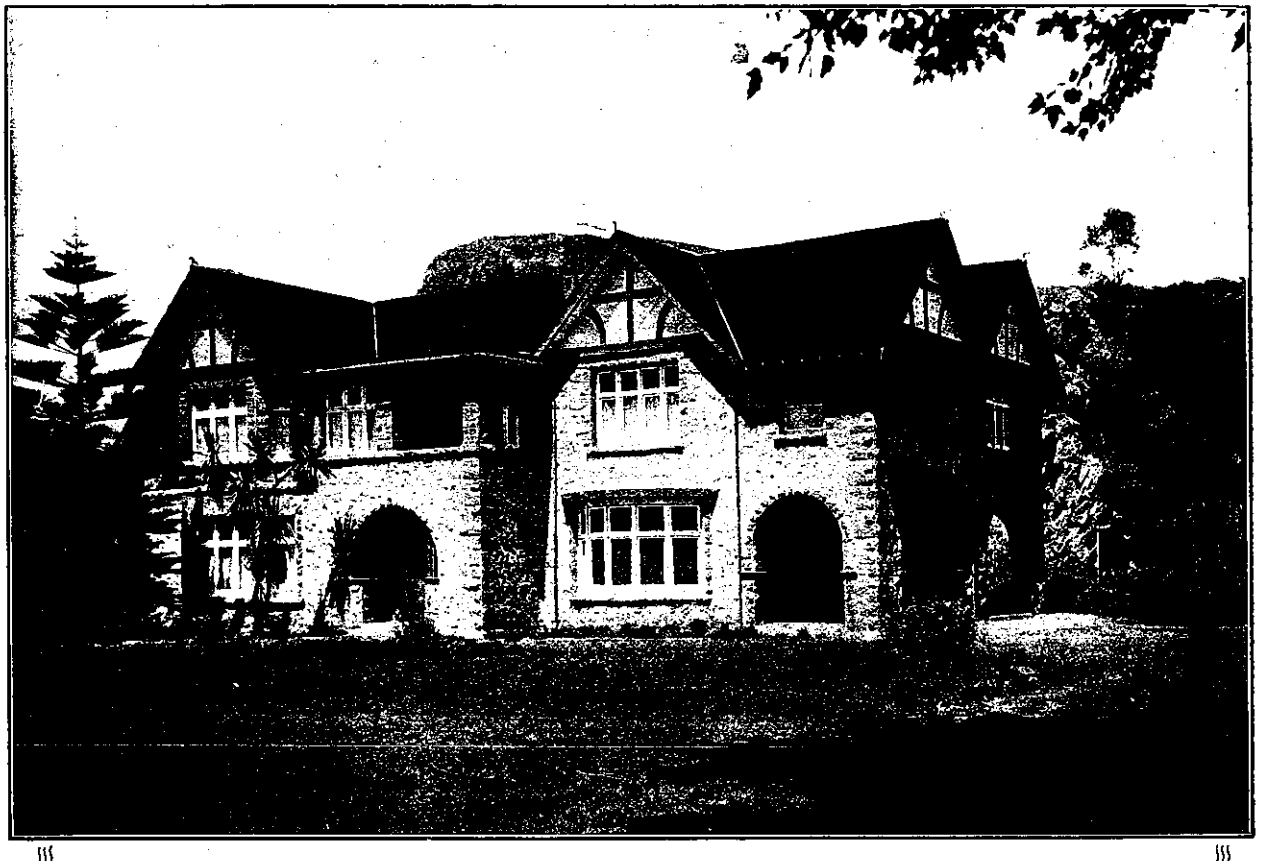
N.Z. BUILDING PROGRESS



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N.Z. BUILDING PROGRESS.

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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.

Publisher's Announcements.

SPECIAL COMPETITION!

SOLDIERS' MEMORIAL

First Prize £10 10s. Second Prize £3 3s.

OPEN COMPETITION.

We offer a prize of £10 10s. and a second prize of £3 3s. for the designs adjudged to be the best for a Soldiers' Memorial for erection in a small town of about 1,500 population in accordance with the following conditions:—

1. Cost not to exceed £250.
2. Memorial to be isolated and viewed from all points.
3. Sculptured statues are obviously excluded by limitation of cost.
4. Lettering to be particularly studied as an intrinsic part of the design.
5. Materials to be enduring and concrete may only be used in the core.

Drawings required:—

(a) Plans, sections and elevations to properly illustrate the design, drawn to ⅛ inch scale, in ink, not shaded and not coloured.

(b) ½ inch scale details, with sections of all parts, and showing inscription, fully rendered.

(c) Full size details of the following letters, showing mode of execution; S. W. M. R. A. C. Y. The materials and their treatment must be stated. The inscription to be "To the memory of those who fell in the Great War."

Bronze panels (to be inserted afterwards), may be introduced, but the design must be complete without them.

The designs will be judged by Messrs. W. S. La Trobe, Joseph Ellis and William M. Page.

Designs must be sent in under a nom-de-plume addressed to "Progress," 8 Farish Street, Wellington, and clearly marked "Soldiers' Memorial Competition" on outside, with a covering letter giving name and address of competitor. The competition is **open to anyone** who can design, and drawings must reach Progress Offices by the end of November. This question of Soldiers' Memorials being a national one, it is hoped that a good response will be made. The proprietors of this journal reserve the right to publish any or all the designs as they think fit.

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, 8, Farish 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.

VOL. XIV. No. 3. Monthly REGISTERED AS A NEWSPAPER

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

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, NOVEMBER, 1918.

Contents for November

Editorial Comment

The Shortage of Houses.

One of the most perplexing problems of modern times has been—and still is—the shortage of houses. And, in this country, in common with other new lands, it is one which will be intensified, rather than relieved, by the dawn of peace. For the influx of immigrants, added to the return of thousands of soldiers, will mean the coming of a host, the individuals of which will demand roofs over their heads. There is only one possible solution of the problem, and that is to build, build, build more homes. We are accustomed to hear those who build in these expensive times, referred to in critical terms by wise men from all points of the compass. Yet these builders of homes are benefactors. There is an Eastern proverb that a man to justify his existence must tame a horse, plant a tree, and beget a son. In the Anglo-Saxon version, the taming of the horse might well be altered to the building of a house, and the Government of New Zealand should encourage this worthy ambition by using its influnce to keep the cost of raw materials within reasonable limits.

A Splendid Example.

The finished portions of the Parliamentary Buildings at Wellington afford an excellent example of what can be done with a locally quarried material when those concerned put their hearts into their work. In this instance the material is Takaka marble and the success which has attended its use in the huge building is a matter for congratulation. Some picked panels which were used in the lounge are beautifully marked. In fact connoisseurs claim that these slabs of New Zealand marble are equal to the very best Italian marble. And there are many more such slabs in the Takaka hills. The supply of the stone is practically unlimited, as a casual visit to the locality will prove. The Takaka Range rises abruptly to the westward of Motueka in Tasman Bay, and continues in a northerly direction to Separation Point between that bay and Golden Bay. Spurs and offshoots branch and all terminate on the sea front. It is from one of

these bluffs that the stone was quarried and is still being quarried for the Parliamentary buildings. But the whole of the Takaka Range shows outcrops of marble. It is in fact a marble mountain. From a quarry near the summit of the road which crosses the range to link Takaka with Motueka, marble was won with which to build Churches in Motueka and Takaka. White marble was chosen for both buildings and it was used in the rough with most pleasing effect. There are four colours of marble in these mountains however —white, black, dove coloured and grey— and all take an exquisite polish. The formation of the hills where the marble comes from is unusual. It suggests intense volcanic activity in ages past and quite deep extinct craters are to be seen of varying extent and depth. Reports by experts have been unanimous in declaring the marble to be of good building quality. It is only on the question of profitable working that doubts have been raised. Now that the stone has been given prominence in an important national building an increased demand should follow resulting eventually in a more extensive working of the existing quarries and the opening up of new ones. That the Dominion possesses a valuable asset in these mountains of marble there can be little doubt.

Simple Town-Planning.

To the average person the idea of town-planning is of an intricate and ornate laying-out of grounds, parks and streets, and planning of massive buildings. But the art of town-planning is really a simplifying rather than an elaboration of detail. It can be applied to a hamlet with as much success as to a city. In fact, a town-planner is quite as necessary a person as an architect when any laying-out of grounds and planning of buildings is in view. So much is this realised that many modern architects are town-planners too; and the combination invariably results in excellent work being done. But always it must be remembered that simplicity, not elaboration, is the end in view, even in planning such a city as the Federal City of Canberra. An example of the application of town-planning to a suburban scheme is that of Kuralta Park, a suburb of Adelaide. The area was one of 120 acres adjoining a railway. It was originally intended to be subdivided, with 40 feet roads adjoining the railway, and other streets intersecting at awkward angles. There was no provision for parks or for dealing with through traffic; in fact, it appears to have been quite a badly-planned place. However, Adelaide has a Town-planner (Mr. Reade), formerly of New Zealand, and the South Australian Government sent the plan to him at the request of the Surveyor-General. The amended scheme which the Town-planner prepared met with the approval of the Railways Commissioner, the Surveyor-General, the District Council, and the owners of the land. Briefly, the new plan secured for the residents a new station site with a spacious "Place" 72 feet wide for street traffic and station purposes, as well as extra width for station buildings, etc. The width of roads adjoining the railway was increased to 66 feet, and a main traffic avenue, 66 feet wide, will provide a new direct route to the sea from the city of Adelaide. Drainage reserves also were provided, and a creek diverted to remove danger of flooding. In addition to all these benefits, five acres of park and recreation reserve were secured and have been transferred free to the District Council of West Torrens. The whole of this advantageous replanning was secured, be it remembered, by simplifying, not by elaborating.

N. Z. Asbestos.

At the present time New Zealand is importing asbestos tiles from Australia, in the making of which, report has it, a certain amount of New Zealand asbestos is used. It is some years since asbestos was mined and worked in the upper Takaka Valley, and after a brief trial, the working of it into marketable asbestos was abandoned and the raw material shipped away. Whether this is still being done or not, the fact remains that New Zealand asbestos is the real article. It has not nearly so long a fibre as Italian asbestos, it is true, but this is no impediment to its successful manufacture. In Canada, a similar short-fibre asbestos is worked, and, as a matter of fact, the methods of working it are being shown in a film picture now being exhibited in New Zealand theatres. Some day, no doubt, New Zealanders will make a commercial use of their minerals, and New Zealand asbestos roofing tiles and building sheets will no doubt be among the articles made. Special facility for the successful accomplishment of this work is offered in the Takaka Valley, for at Terakoke, at the seaward end of the valley, there are extensive cement works belonging to the Golden Bay Cement Company. What more desirable combination than that of asbestos and cement could there be for the making of asbestos sheets and tiles? Yet New Zealand is still importing her commercial asbestos from overseas countries.

Concrete Dwellings.

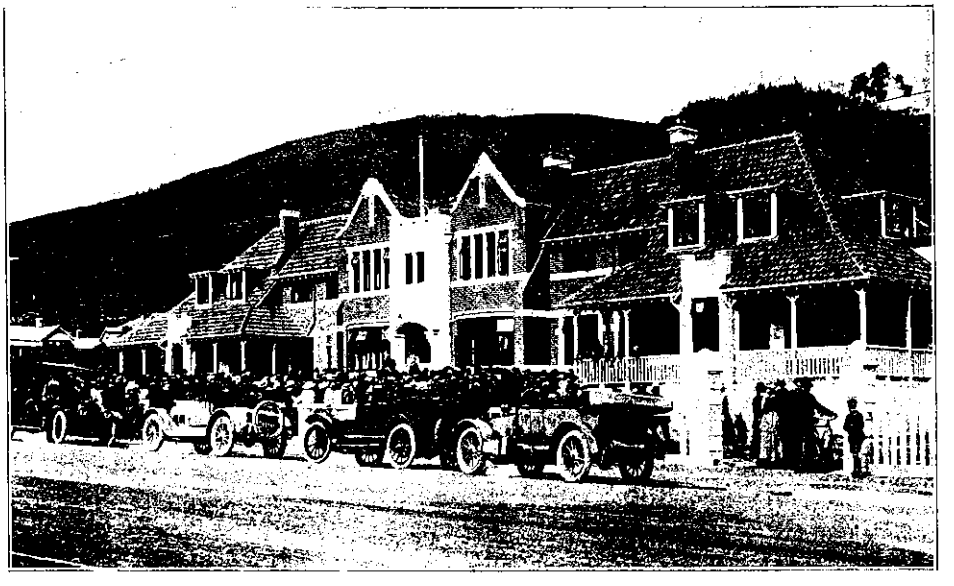
Building houses of wood has become a habit in New Zealand, as it has in Queensland. In the latter State, the people express their preference for the wood, as being cooler and lending itself to prettier effects in cottages. The Queenslanders build their houses high above the ground, to allow a free passage of air beneath. In the older and more southern States of Australia where colder conditions are apt to prevail, very little wood is used. Brick and stone are chiefly used. New Zealand's use of wood, originated, of course, in the days of severe earthquakes, when it was felt that brick buildings would speedily become disintegrated and fall in ruins. The advancement in concrete work in buildings has disposed of most of those fears, especially as regards one-floor or two-storey residences. The heavy increase of building timber, due to the cutting-mills having to move further into the forests away from the railways, and to other causes, all of which will not be removed after the war, has caused the thoughts of builders to turn to other materials. And always concrete obtrudes. This material is especially suitable and economical at seaside resorts, and in valleys where river-sand is obtainable. And, moreover, its use does not affect the timber-mills appreciably, for the interiors of concrete houses are best finished in New Zealand woods, while timber is still necessary in the ceiling and roof work.

THE ROSS HOME FOR AGED & NEEDY

New Building at Normanby, Dunedin

On this page we illustrate a new home erected in Normanby, N.E. Valley, Dunedin and officially opened last month to be used as a home for the aged and needy. The land which covers 10 acres, was the gift of Mr. John Ross, whose public spirit has been shown on other occasions in a similar way.

The building which was erected to designs by Mr. W. H. Dunning, by Messrs Fletcher Bros., faces west, the northern end being intended for female inmates and the southern for those of the sterner sex in addition to which accommodation is also provided for married couples. The rooms and living quarters of the old people are cheerful, and while small dormitories are to be utilised at present, the idea is that the inmates should have as much privacy as possible. In any case, the rooms which it is intended to use as dormitories will be partitioned off into suitable-sized cubicles, or small rooms, to accommodate one person. A portion of the upstairs part of the building is intended for the accommodation of the staff. Quite a series of bath-rooms and lavatories are conveniently situated in the building, and there is not an inch of space in the interior wasted. The dining-room is the largest room in the building, and, in addition to being well ventilated, is well lighted and cheerful. The pantry, servery, and kitchen are well arranged. The latter is fitted with a specially-made range, in addition to which there is a large gas cooker, and provision is made for the installation of a second one of these should occasion demand it. White tiles, resembling building bricks, surround these cooking appliances. In the centre of the room is a large table fitted with bunkers, each worked on a pivot from the bottom, and swing open when a brass button is released. There are quite a number of these and they are capable of holding over half a hundred-weight of sugar, flour, oatmeal, rice, sago, currants, raisins, and such like common articles intended for culinary purposes: situated above each of these bunker compartments is a drawer intended to contain articles required in smaller quantities. In a long narrow room off the kitchen is the coal-house, the interior of which is divided in some half-dozen small cubicles for holding coal. These are arranged somewhat after the style of coal bunkers on a steamer, the bottom of each cubicle being so fitted that the coal "feeds" to the front automatically, but in just sufficient quantities to fill a shovel. Other rooms include a laundry, or glorified wash-house, fitted among other things with electric irons; and a store room, which is an airy compartment, where meat and vegetables may be kept. Concrete verandahs almost surround the entire building above and below, which will be found of great benefit to the inmates, especially those who may be unable to get out of doors. Underneath the lower verandahs there is accommodation for an immense stock of firewood, and seeing that wood fires will ultimately be provided for in every room the provision is a wise one. Ample fire escapes are provided, and as all doors open outwards



The Ross Home.—New Home for Aged and Needy, by the Presbyterian Social Service Association.
Architect: Mr. W. H. Dunning. [*Contractors: Messrs. Fletcher Bros.*

on the verandah, almot absolute safety from an outbreak of fire is assured. It is intended to erect a hospital some 30 yards behind the present block of buildings, which after all will be the administration block when the scheme is developed and completed, connected by a covered-in right-of-way with the main building. For the present hospital wards and nursing accommodation are provided for in the front of the main building. The cost, including roading and asphalting is nearly £6,000, of which sum about £4,000 has been subscribed to date. The committee has in view the erection of further necessary buildings, such as a hospital, and additional living rooms, which will involve a further expenditure of £5,000.

N. Z. Institute of Architects

Wellington District Branch

Report presented at the annual meeting held at the registered office of the Institute, 153 Featherston Street, Wellington, on Friday, October 11th, 1918, at 7.45 p.m.

The Branch has held four ordinary meetings and four committee meetings during the session. One ordinary meeting lapsed for want of a quorum.

The following attendances were made by the members of the Executive at committee meetings:—Mr. Lawrence (chairman), 4; Mr. McKay (vice-chairman), 1; Mr. Crichton, 1; Mr. Feilding, 4; Mr. Kean, 4; Mr. Gray Young, 3; Mr. J. S. Swan, 3; Mr. Dawson, 1; Mr. Haughton, 2; Mr. H. T. Johns (Hon. treasurer), 4; Mr. F. H. Swan (Dist. Secretary), 4.

The membership of the Branch now comprises 38 Fellows and 43 Associates, giving a membership of 81 as compared with 52 Fellows and 78 Associates last year. This reduction in the membership was brought about by a suggestion to the Council of the Institute by this branch that the Wellington District Branch should be divided into three. This has been given effect to and the result will give the two new branches thus formed, viz., Taranaki-Wanganui District Branch, a membership of 31 and Hawke's Bay-Gisborne District Branch a membership of 24 and also allowing adequate representation in Council and Branch Committee.

During the year two more members of the branch have joined the Expeditionary Force for service abroad, viz., Messrs. Hamilton and Barrett, and two members have been accepted for Home Service. With the calling up of the Second Division and consequent proceeding to camp, members should notify the secretary of such change as the subscription fees of all members on active service are remitted.

We regret to record that one of our most promising Associate members has given his life for his King and country whilst serving with the Forces, viz., Alan Stevenson; whilst another most promising Associate member has passed away during the year, viz., Montgomerie Ballantyne. Our sincere sympathy goes out to the relatives of these deceased members.

During the session a most interesting lecture on "Methods of Graphical Representation of Formula" was delivered by Mr. La Trobe, an honorary Fellow, before a record attendance of members. It is hoped that in the future more lectures will be arranged, and with this in view, two lectures have already been promised for the ensuing year.

The proceedings of the branch have been limited to ordinary meetings with little of importance to report. Owing to varying causes members have been very lax in attending meetings, one meeting lapsing for want of a quorum. It is hoped that, in the future members will take a more active interest in the welfare of the branch.

We regret to again record the number of outstanding subscriptions, and it is hoped that members will recognise their obvious duty in this respect as the delay in payment of fees tends to hamper the finances of both the Institute and the branch.

Your Committee feels that the Government should be asked to regulate prices of timber generally, and with a view to reducing the cost of same, the exportation of all timber to Australia should be stopped.

At the last annual meeting of the Branch the committee was empowered to invest the surplus funds of the Branch. This has been done, and the sum of £30 has been placed on fixed deposit bearing interest at the rate of £4 10s. per centum per annum.

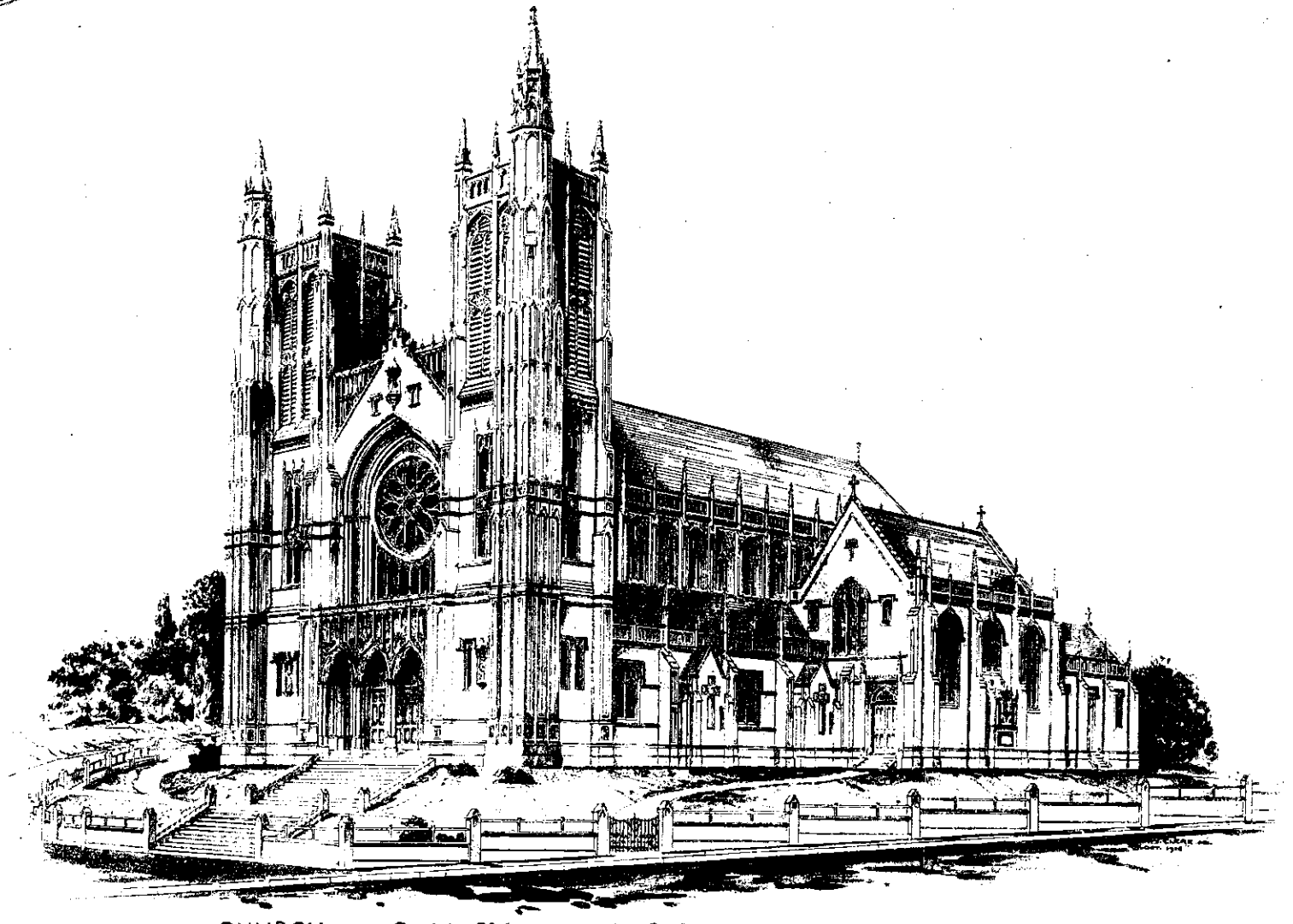
A statement of the receipts and payments for the year was attached to the report duly audited, which showed the finances of the Branch to be in a satisfactory condition.

For the Committee,
FRANCIS H. SWAN,
District Secretary.

New Wharf for Auckland

It is proposed to erect a new wharf at the end of Freeman's Bay reclamation costing £40,000 to £50,000. A wharf 650 feet by 60 feet would provide accommodation for two colliers or an ordinary-sized tramp steamer and a sailing vessel. It would be necessary for a channel to be dredged, with a width of 700 feet at the outer end, to 600 feet abreast of the wharf, and to the north wall, with a minimum depth of 25 feet.

The office of the New Zealand Institute of Architects, which is situated in the Norwich Union Fire offices, 153 Featherston Street, Wellington, has recently removed from room No. 9 to room No. 11 in the same building. The new room is much more commodious and suitable to the increasing needs of this body. The question of furnishings for the new room was mentioned by the president (Mr. Chas. A. Lawrence) at the annual meeting of the Wellington District Branch held on the 14th inst., when offers were received from individual members to donate a carpet, a settee, two tables and twelve chairs. The generosity of local members, in thus furnishing the Institute's head office, is highly commendable.



CHURCH OF ST MARY OF THE ANGELS WELLINGTON N.Z.

MESSRS CLERE FRIBA AND WILLIAMS ARIBA ARCHITECTS.

Building Costs

Discussion in Christchurch

An interesting discussion occurred recently in Christchurch regarding the increased cost of building. The matter arose over a hospital for Oxford County, which was estimated, presumably by the architects, at £3200, but when the tenders came in the lowest tender was £4300.

At a meeting of the North Canterbury Hospital and Charitable Aid Board the Chairman, Mr. F. Horrell, said that eight tenders had been received ranging from £4300 to £6700. Added to that were £400 for lighting, and the cost of furnishing and other details, and, on the basis of the lowest tender, the total cost would be close on £5000. Since the plans of the hospital had been sent in to the department, the Inspector-General had made certain alterations in them, so increasing the cost, and the prices of building materials also had risen. The matter affected the finances provided by the Oxford people, as well as the Board's finances, and the Finance Committee recommended that the position be placed before the Minister-in-Charge of Hospitals. It was now for the Minister and the Oxford people to say what should be done.

In the discussion which followed it was stated that the Board's estimate of the cost was prepared about six months ago.

Mr. O. Bradley advocated waiting until the war was over, being of opinion that, with the resulting increase in manufacturing activity, the prices of materials, apart from timber, would decrease.

Mr. H. J. Otley advanced different views. He pointed out that prices are rising "every day," and that the shipping difficulty, not only now, but also in the future, had to be considered. When the war was over, there would be a strain on shipping space, because of so many thousands of men having to be returned overseas to their homes. Again, an enormous amount of material would be required for the rebuilding of the devastated portions of Europe. He could not see any hope of prices falling appreciably for some considerable time after the war ended. Timber certainly would not get cheaper unless they could get cheap freights from America.

"What about the West Coast?" interjected another member.

Mr. Otley replied that the West Coast people could get more for their timber in Australia than it could be retailed at in Christchurch, but they were loyally keeping Christchurch merchants going. Unless the Oxford people could wait for five or seven years, he could not see that anything was to be gained by waiting until prices decreased, and he took it that proof of the real need of the hospital was provided by the fact that the Oxford people were so willing to provide their share of the cost. Mr. Otley added that earlier in the war he had advised his clients who wished to go in for building to wait, but now he regretted that advice, for people who could not wait any longer had had to build at greatly increased cost.

After further discussion it was agreed to place the position before the Minister, and that the Finance Committee should wait on him when he is next in Christchurch.

Curiously enough, the tender for the new morgue at the Christchurch Hospital, accepted a few minutes later, was found to be £170 below the estimate, but no statement as to the date of the estimate, or other explanation, was given.

Builder's Estimate of Increases

A discussion arose at the meeting relative to increases which have resulted to the prices of building materials. Just what the advances during war period really mean can be realised from the following figures which have been supplied by a well-known builder:—

	Increases per cent.
Red pine	50
Nails	300
Linseed oil	250
White lead	175
Glass	200
Galvanised iron pipes and fittings ..	200
Labour	10
Spouting	400
Lime and cement	20
Laths	125
Average increase on these lines ..	173

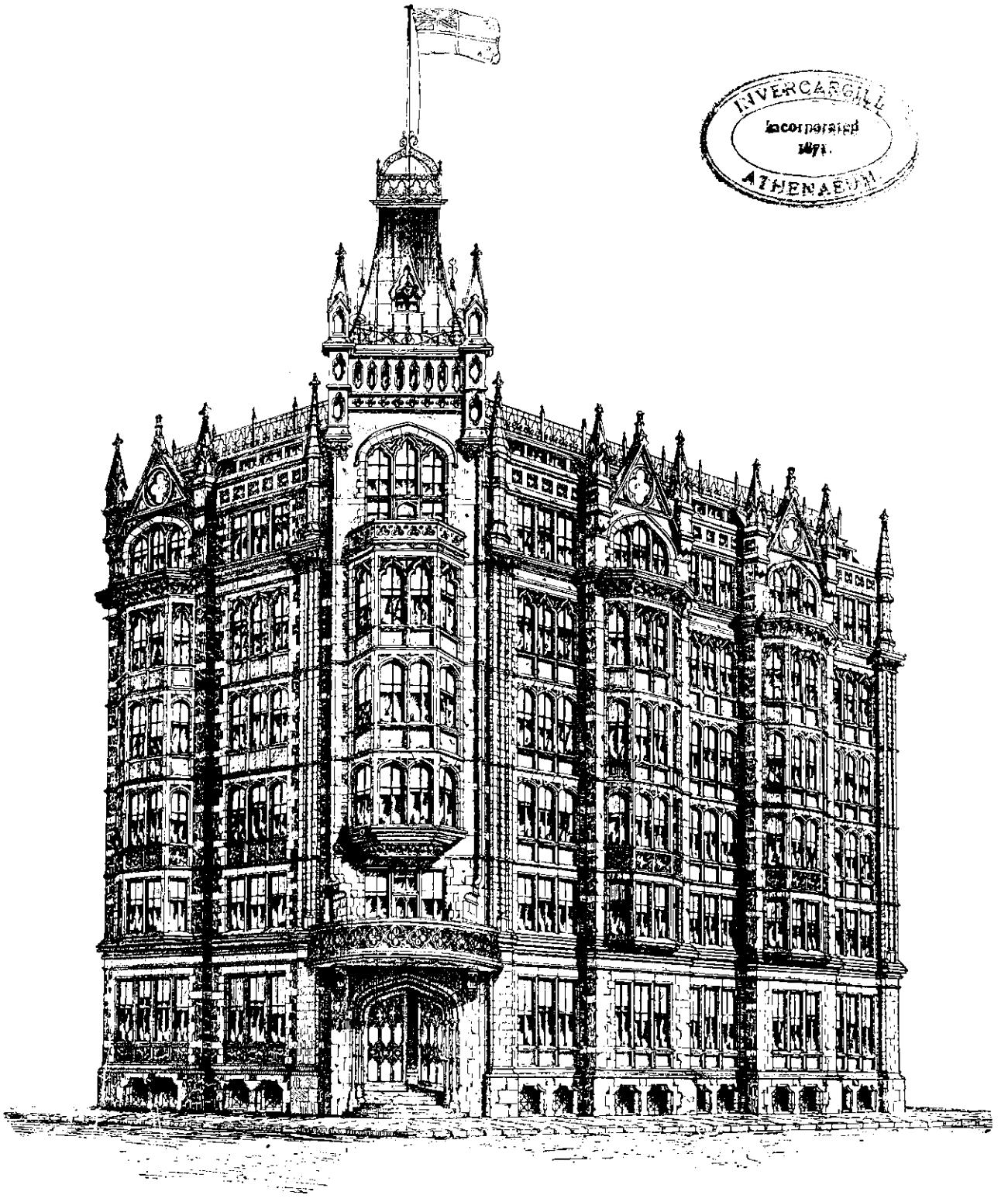
Manufacture of Dyes in Britain

The High Commissioner for New Zealand, in London, has been informed by the British Board of Trade that in the last two or three years considerable progress has been made in the manufacture of artificial dyestuffs in Britain, and it may be taken that, generally speaking, British manufacturers are now in a position to meet the demand both of the United Kingdom and the Dominions for about 75 per cent. of the dyestuffs which they are likely to require under normal conditions. The remaining 25 per cent. are largely dyes of a special character, the manufacture of which can only be undertaken as the necessary raw materials and technical skill become available. Up to the present the progress has been most marked with regard to those dyes required for the woollen industry, particularly those used for woollen-piece-goods dyeing, and there is therefore reasonable hope that it will shortly be possible to meet the whole of the requirements of the New Zealand woollen industry for dyes from British sources of supply. In this connection it may be stated that during the year 1917 licenses were granted for the export to New Zealand of 7 1-5th tons of dyes.

Applicant: "And if I take the job I'm to get a raise in salary every year?"

"Yes, provided, of course, that your work is satisfactory."

"Ah! I thought there was a catch somewhere."—"Life."



The Dominion Farmers' Institute, on the corner of Featherston and Ballance Streets, Wellington, now nearing completion

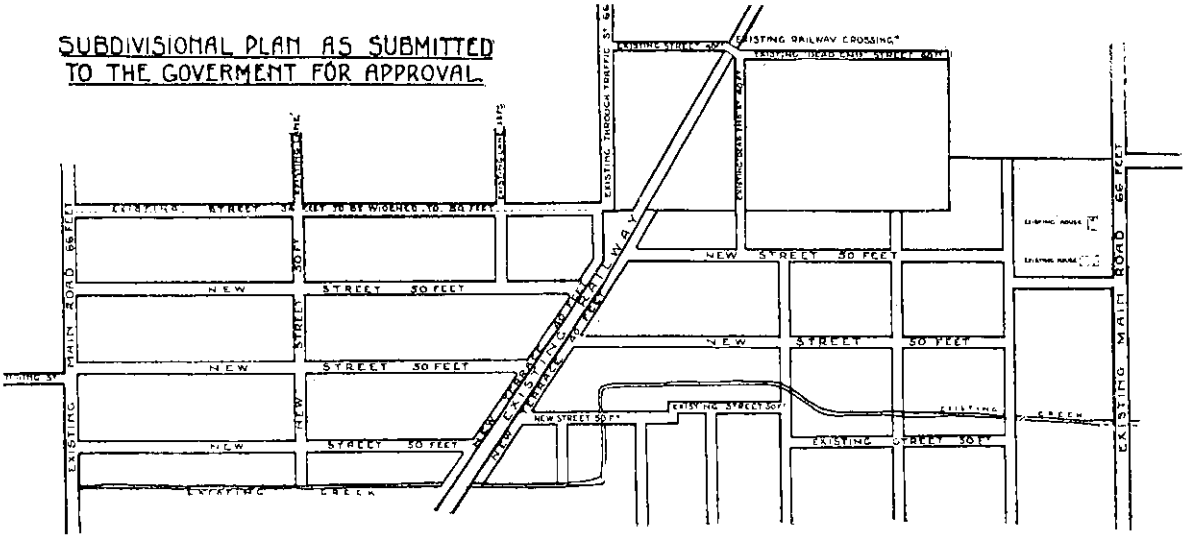
Architects: Messrs. Collins & Harman, of Christchurch. [*Contractors: Messrs. Fletcher Bros.*

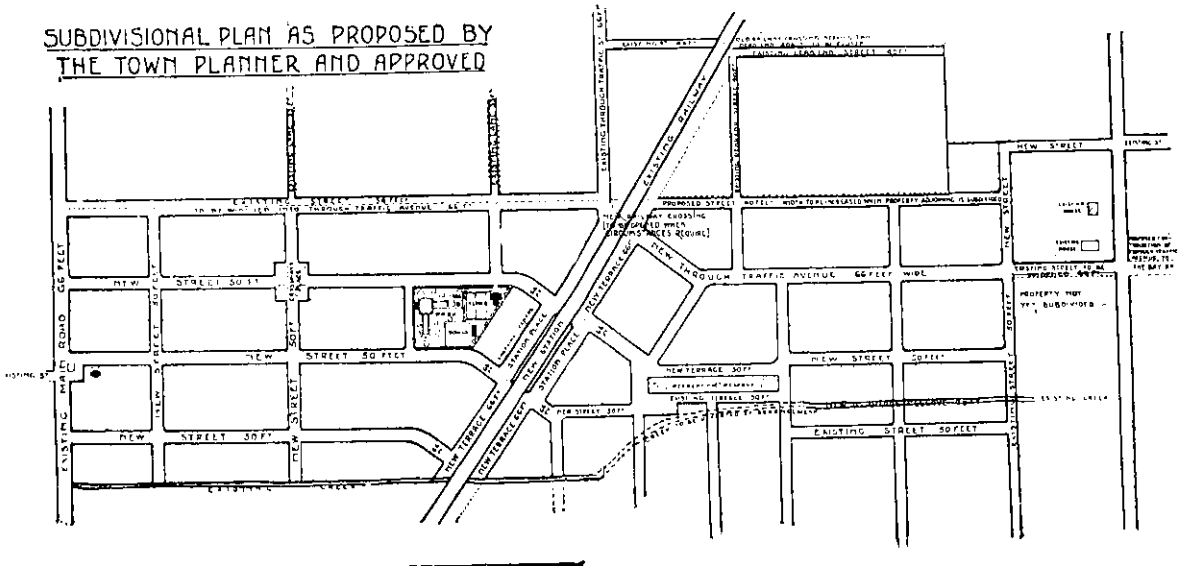
Value of Town Planning

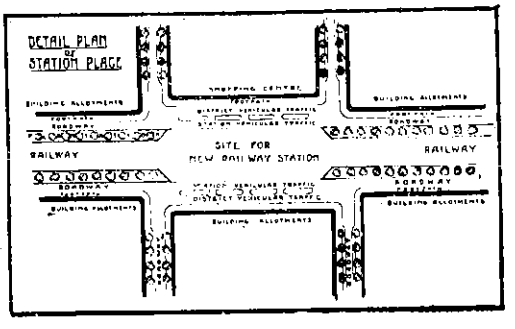
Kurralta Park (Suburban Adelaide)

"Kurralta Park" (about 120 acres), situated in the western suburbs of Adelaide, adjoining the Glenelg Railway, was originally proposed to be subdivided as shown, with 40 feet roads adjoining the railways, and other streets intersecting at awkward angles. No provision was made for dealing with through traffic, recreation grounds, etc.

The proposed plan was sent on to the Town Planner (Mr. Reade) by the Government, at the request of the Surveyor-General. The amended scheme was approved by the Railways Commissioner, the Surveyor-General, the District Council,







Difference between Division of Control and Co-operation of Councils and other Authorities concerned in Relation to New Subdivisions.

Showing by alternative plans the effect upon new subdivisions where the statutory authorities are consulted together with the Council, and their respective requirements laid down under Town Planning before the plans are approved: also the results that otherwise are apt to follow.

and the owners. It secures for the public without charge:

1. A new station site with proper "Place" 72 feet wide for street traffic and station purposes, apart from the extra width secured also for station buildings, etc.

2. Roads 66 feet wide adjoining the railway.

3. A main through traffic avenue 66 feet wide, which ultimately will connect with the Bay Road and provide a new direct route to the sea from the City of Adelaide.

4. Drainage reserves and diversion of the Brownhill Creek to remove danger of flooding; and

5. Five acres of park, recreation reserve, etc., which have been transferred free to the District Council of West Torrens.

Cold Storage Accommodation

Ferro-Concrete Design in London

The impetus given to the production of New Zealand produce, and particularly meat for export through the Imperial Government's purchase of our output has caused a number of local firms to extend their storage accommodation. The same question has been occupying the minds of the London authorities and a description of the Charterhouse street cold storage buildings belonging to the Port of London Authority will no doubt prove of great interest to those contemplating extensions in this direction. The description below was given before the Concrete Institute, London, by Mr. H. J. Deane quite recently.

The building, which was brought into use in the autumn of 1914, stands on a raft or platform constructed of built-up steel girders over the railway connecting Farringdon street and Snow hill stations. The allowable loading on the platform was restricted to 8 cwt. per square foot and in one portion to 4 cwt., and this limitation naturally had an important effect on the design. The building generally is constructed of reinforced concrete, faced on the Charterhouse street side with granite and Portland stone. It has three floors in addition to the ground floor, the six cold storage chambers being on the ground, first, and second floors, while the top floor is utilised for the sorting and distribution of produce and for office accommodation. The chambers, access to which is normally obtained only from the top floor, have a capacity of about 386,000 cubic ft., and can store 78,000 carcases of sheep. If the building had been required to conform strictly to the London Building Act regulations, the floors would have had to be designed to carry "warehouse" loads of 224lb. per square foot, and this would have so greatly reduced the allowable live loading that the storage capacity would have been reduced below the point at which the stores could be made to pay. As it is, the capacity is some 6,000 carcases fewer than was originally anticipated when negotiations for the lease of the site were first entered into with the City Corporation.

Features of Construction

Owing to the necessity for restricting as little as possible the space allowed for the cart area in the front of the building, it was decided to employ, in place of reinforced concrete, nine solid steel columns, varying from 6in. to 7in. in diameter, and 12ft. 8in. long. These columns were continued upwards as concrete columns. Under London County Council Regulations this arrangement would have been impossible, as the requirements of the Building Act in respect of steel-frame buildings and the Reinforced Concrete Regulations cannot be applied at the same time in any one building.

The live loads to be provided for were 40lb. per square ft. on a horizontal plane for the pitched roof (including the dead load for the roof itself), 56lb. on all flat roofs, 1½cwt. on the first and second floors, and 1 cwt. on the third floor. The weight of the reinforced concrete work was taken as 150lb. per cubic ft. and of the insulating materials as 18lb. All walls were considered as subject on each side to a uniform pressure of 40 lb. per square ft. over the whole area. The worst possible combinations of the above loadings were taken in arriving at the maximum stresses. In general the methods and formulæ outlined in the second report of the R.I.B.A. Committee on reinforced concrete, dated 1911, were adhered to.

The concrete was composed of clean crushed Thames ballast passed through a ¾ in. and retained on a ¼ in. screen, mixed with Ham River grit in the proportion of 2 to 1, with latitude for variation when necessary so as to ensure the whole of the voids being properly filled. The cement used was in the proportion of one bag of 224 lb. to every 4½ cubic ft. of sand, and complied with the requirements of the British Standard Specification, the initial set being between 50 and 90 minutes and the final set between 5 and 7 hours.

The beam moulds were so arranged that the sides were readily removed without disturbing the bottom until the beam was sufficiently set, the camber allowed for in the moulds being $^1/_{300}$ to $^1/_{350}$ of the span, according to the dimensions of the beam. The column moulds were all arranged with one open side, and this was built up as the concreting proceeded. The steel reinforcing bars were of plain circular sections, having an ultimate strength of 28 to 30 tons per square in., with an elongation of not less than 20 per cent. in 8in., and otherwise generally conformed to the British Standard Specification. These bars were covered with at least 1in. of concrete in the case of beam columns, etc., and ½ in. in the case of the floor slabs, except where such slabs were in contact with the insulation, when not less than 1 in. cover was provided.

The minimum time allowed before removing the supports from the reinforced concrete was, in the case of the main beams and floors, 14 days, and in the other cases 8 days. The maximum test loads to be applied to the floors and beams provided for an excess of 50 per cent. over the live load for which the particular portion of the structure was designed,

and the resulting deflection was not allowed to exceed $^1/_{600}$ of the span.

Refrigerating Plant

The refrigeration is effected on the cold-air-circulation system, which in this case materially reduced the weight of the refrigerating equipment in the chambers, since the air ducts are very much lighter than direct expansion pipes or brine pipes would have been. The low temperatures are produced on the Lightfoot ammonia compression system by the expansion of anhydrous ammonia. The ammonia compressors, which are in duplicate, are horizontal, double acting, with pistons 14 in. in diameter and a stroke of 28 in., running at 55 r.p.m. and driven by 150 b.h.p. electric motors. Each unit is capable of keeping all the chambers at 10 deg. F., when the outside temperature does not exceed 75 deg. The two ammonia condensers, placed on the roof of the machinery room, each contain about 4,720 ft. of iron pipe nearly 2 in. in external diameter. The cooling water is pumped over them by two independent 4 in. electrically driven centrifugal pumps, each capable of discharging 300 gallons a minute. The air-cooler batteries, also in duplicate, consist each of a series of vertical corrugated galvanised steel plates, having a total superficial area of 27,500 square ft., arranged over a wrought iron collecting tray and having above them a series of perforated steel trays, into which a constant stream of cold brine is delivered by an electrically driven centrifugal circulating pump. This pump draws the brine from wrought steel tanks below the trays, in which are placed about 5,420 ft. of ammonia direct expansion coils of 1½ in. external diameter, arranged with suitable baffles to ensure efficient circulation of the brine. Air is blown by means of electrically driven propeller fans between the corrugated plates, when it loses its latent heat and thence passes through a system of air trunks into the cold chambers, returning to the batteries to be again cooled. The delivery air trunk from the batteries has a cross-section measuring 10 ft. 9 in. by 5 ft., and is contained in a reinforced concrete shaft. Six branch trunks conduct the air into the cold chambers, and six others conduct it out of them into the two return trunks.

Insulation

As a precaution against the possibility of moisture condensing on the insulation where it comes in contact with the concrete, the interior of all the outside walls, except that on the east side, was coated with ¾ in. of Limmer asphalte put on in two layers. This precaution removed the risk of ice forming in the silicate cotton insulation; should such a thing happen, the value of the insulation would be seriously reduced and great expense incurred in cutting out and making good the damage, besides loss of accommodation and revenue during execution of the repairs. With certain exceptions, the whole of the insulation is of silicate cotton filled in between timber "grounds" and boarding.

For handling the produce there are two vertical continuous mutton conveyors and six goods lifts. The conveyors, which extend from the level of the loading bank up to the top floor, are of the finger tray type, driven by 5 h.p. electric motors, and have a capacity of 650 carcases a minute at a speed of 100 ft. a minute. At the bottom the carcases are placed one by one on a wooden table inclined towards the conveyor, and slide down to and are retained on stationary prongs arranged to miss the fingers of the conveyor trays. From this point they are picked up by the next tray as it ascends, and after passing over the top pulleys are landed on a similar series of prongs at the upper level, thence sliding down upon another wooden table on the sorting floor.

Designers' Names

A rather petty piece of malice on the part of a County Council towards the designer of a bridge in Otago is commented on by the "Otago Daily Times" as follows:—"The inclusion of the name of an engineer from a tablet on a public structure, in the planning of which he took a large part may be regarded by some people as a matter of small consequence to any but the individual directly affected. When, however, it involves a breach of faith it assumes more than a personal importance. Such is the case in the studied refusal of the Vincent County Council to recognise the claim of Mr. E. F. Roberts, a young engineer, who has been absent from the country on active service since early in the war, to have his name placed on the tablet on the Luggate bridge. The "Alexandra Herald," which vigorously condemns the action of the County Council in the matter, says that the facts as admitted are as follows:—The County Council's engineer, being unable to do the work himself asked for and obtained the sanction of the Council to engage an assistant. Mr. Roberts was engaged on the condition that his name would appear on the plans as joint engineer. His name did so appear—as joint, not assistant engineer. That the credit of the plans belonged to Mr. Roberts is also borne out by the fact that the County engineer stated in writing that Mr. Roberts practically did the whole of the work and designed the plans for both the girder and the cantilever type of bridge. In these circumstances it is not in unduly caustic terms that the "Alexandra Herald" comments on the inclusion in the tablet of every name except the one most entitled to appear on it—that of the designer—and on the cold indifference of the County Council to the claims of Mr. Roberts to recognition. It is certainly due to Mr. Roberts that an acknowledgment should be made, in the permanent form provided on the pridge, of the skilled service which he rendered in designing the plans for the structure. In refusing, as it seems to have repeatedly refused, to accord to him this measure of justice, the County Council is treating him very shabbily."

A girl who was running a London bus was making out her first report. Under the heading "Accidents" she stated: "Bumped into an old gent." Under the heading "remarks" she said: "Simply awful."—"Tit-Bits."

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: Mr. W. T. IRVINE.

We notice the Governor's speech at the opening of Parliament foreshadows legislation with regard to afforestation and the regulation of timber export from New Zealand, and are aware the former has been in contemplation for some time past and that the Department will be in charge of Sir Francis Bell. In this connection it is desirable that the proposed legislation should be submitted to the Council of the New Zealand Forestry League, which should have the opportunity of expressing an opinion on the measure after being introduced to the House and we commend the matter to the President of the League, Sir James Wilson, for his earnest consideration. We are now fortunate in having secured a fair number of sawmillers as members of the League, and other associations and companies would do well to follow the example of the Main Trunk Timber Trade Protection Guild members, who have all joined the Forestry League so as to place themselves in the position of being in closer touch with all matters pertaining to afforestation. Successful forestry departments have been in existence in Victoria, New South Wales and Queensland for some years. America is waking up to the necessity of starting the growth of new timber to replace in some measure what is cut down and it must be admitted the step taken on behalf of the Dominion is in the right direction so long as it is carried out on sane lines and after the most careful investigation by thoroughly qualified experts who would make a study of our timbers before advocating regeneration or replacement, by the introduction of fast-growing firs, spruce, etc. As to the limitation of export, this is already provided for by the Timber Regulations recently Gazetted as a war measure, but it is evidently intended there shall be an extension of these Regulations to remain in existence after the close of the war. We shall hope to comment upon the measures as soon as they are brought down, as we want to see them studied from the practical view point of bush sawmillers.

* * * *

Under date, Sydney, 21st October, we learn that at the Annual Conference of the Country Press Association, the Secretary stated that the Government was experimenting in the production of newspaper from Australian timbers, and if the experiment proved satisfactory, it was proposed to subsidise the industry to the amount of £250,000 and establish mills to provide thirty thousand tons of wood pulp fibre annually. This would, of course, have the effect of increasing the value of all timbers.

* * * *

Labour conditions along the Main Trunk show no improvement, notwithstanding the return of so many drafts of late. Wages are continually on the up grade and many men are placed on the wages sheets at so much per week "wet or dry." Having regard to the exceptionally bad weather experienced right through the winter, this of course adds greatly to the cost of production and must be passed on to the public in the shape of higher prices for our timber. This too is not the worst feature the miller has to contend with, as no one will dispute the fact that lessened tallies are the rule rather than the exception. The question of labour will have to be faced sooner or later and whilst we have every sympathy with the cause of the honest workman, the majority must be educated to see that anything that makes for non-efficiency and lowers the all round standard of work, cannot possibly be in the best interests of the workmen themselves in the long run. If good men stuck to their jobs more rigidly, and a system of profit-sharing were introduced entitling those who had put in, say, twelve months or more steady work, to a share of the profits beyond a legitimate return on the capital involved in a risky business such as sawmilling undoubtedly is, a better state of things than exists at present might be hoped for. The Federation should certainly aim at raising the standard of work and educating the workmen by all means in its power.

* * * *

The joint purchase of mill supplies has been undertaken by at least one Association on the Main Trunk but the system is capable of indefinite extension and if belting, saws, files, nails, axes, oils and other lines could be standardised after careful investigation, a great saving could be made to all millers willing to join together to pool their buying, as well as their selling.

* * * *

Most of the mills that were burned down in the big Raetihi fire are now in operation or will be very soon, and several new ones are in course of erection in the Ohakune and Raehiti districts. Notwithstanding this the output does not equal the demand, and a difficulty is being experienced in obtaining timber for shipment to fulfil freight engagements under contract, whereas a short time since the converse applied and it was difficult then to secure the necessary freight for timber exports. Home requirements are being chiefly used for large buildings such as wool stores, freezing works extension, hospitals and other public buildings, cottage building being reduced to a minimum. The usual outcry against the sawmiller continues to crop up, and the Chamber of Commerce in one or two cases have been urged to influence the Government to instruct the Board of Trade to hold an investigation with regard to the prices of timber. Why not with regard to the prices of all other materials used in the construction of a building?

It will be noted that most of the foregoing remarks are particularly applicable to the southern end of the North Island, and we would urge upon Members and Secretaries of Associations throughout the Dominion to send in local items of interest that may come under their notice, otherwise there will be a danger of confining current topics to one or two localities. The horizon of any one man is necessarily bounded, and we are anxious that local as well as general items of interest shall find a place in the Journal.

* * * *

The war has been the means of using up enormous quantities of all raw materials, amongst which timber has taken a prominent place, and the forests of Russia, America, France and other countries have been drawn upon for the needful supplies to construct roadways, trenches, buildings of all descriptions, hundreds of thousands of barbed wire entanglement posts, telegraph and telephone poles, pit and trench props, and thousands of cords of firewood daily. We learn that over 65,000 expert lumbermen are exclusively engaged in America, cutting spruce for use in the manufacture of aeroplanes. At the beginning of the year the output for the purpose was 2,000,000 feet monthly. It is now 10,000,000 feet a month and will soon be 20,000,000. This gives some idea of the number of aeroplanes America intends to turn out and the quantity of picked lumber used in their construction. A regiment of American lumbermen is operating in France and they expect to have 59 sawmills operating there very shortly. All this goes to show the enormous depletion of the world's timber resources brought about by the war, and that timber values should be regulated by the world's markets.

* * * *

The total computed lumber production of the United States in 1917 was 35,831 million feet, produced by 16,408 sawmills, a reduction of 10% of the quantity produced in 1916. The falling off is attributed to decreased private building operations, scarcity of labour, transport difficulties, lessened demand by wood-using industries, and general trade dislocation. Of the quantity produced a considerable proportion was taken by the Government for war emergency products, including shipbuilding material. Yellow pine formed 37.7 per cent. of the total cut, Douglas fir being credited with 5,585 million feet and white oak and white pine 2,250 million feet. A higher range of values all round than that obtained before the war broke out may safely be predicted for the future.

* * * *

The Annual Conference of the Association of of New Zealand Chamber of Commerce has just concluded and we notice amongst the remits considered was one moved by Palmerston North as follows, viz:—That this Conference urges upon the Government the need of assiting in solving the housing problem, and recommends an inquiry into the cost of building materials, especially timber". If, and when this enquiry takes place we make bold to say it will be found that the increased price of building timber is just about commensurate with the increased cost of production taking all legitimate factors properly into account, and that the percentage increase as compared with pre-war prices is infinitely less than many other items used in the construction of a building.

* * * *

Other remits at the Conference worthy of notice were:—That the Government should consider the immediate adoption of the hydro-electric power schemes, similar to Lake Coleridge, to enable the industries of the Dominion to meet after war competition; That the Conference affirms the principle that War Loans should be taxed; That the Government should control sufficient shipping to move our produce both coastwise and overseas; That more active support and financial assistance should be given the Workers Educational Association; and that the Government should be requested to solve the difficulty of the upkeep of main arterial roads.

* * * *

The question of finding positions for repatriated soldiers was considered and it was urged upon the Government that the Post, Telegraph, and Railway services should be fully reinstated at the earliest possible opportunity.

* * * *

Appreciation.

Appreciation is one of the greatest things in the world. However small it may be it goes a long way and helps to make life worth living. Someone has said it is to man what oil is to machinery and the man who does not apply it is as thoughtless as the man who does not apply oil to the machine he is using. If an employer has not the sense to appreciate the work of his employees, he runs a chance of having his whole business organisation fall to pieces like the machine that receives no oil. If the oil of appreciation has not been applied, the efficiency of the machine is lowered. Whenever a man goes out of his way to benefit you, show your appreciation, you wont lose anything and you'll be making life a lot nicer for all concerned, and you'll like your own life a whole lot better too.

* * * *

Worry not over the future,
The present is all thou hast,
The future will soon be present
And the present will soon be past

For every illness under the sun,
There is a remedy or none,
If there be one try and find it,
If there be none, never mind it.

Consider well your actions.
What's done you can't recall,
No use to pull the trigger
Then try to stop the ball.

It's easy enough to be pleasant,
When life flows like a song,
But the man worth while,
Is the man with a smile,
When everything goes dead wrong.

Costs of Production of Sawn Timber.

A Treatise on Pre-War and Present-Day Figures.

By W. R. NANKERVIS
(Messrs. Gamman & Co., Ohakune).

(Concluded from October issue).

Forestry Department and Logging Operations.

This departmental cost should be taken out under separate heads as follows:—

Falling, Cross-cutting and Hauling—Delivery per Loco to Mill—Upkeep of Tram—Cross-cutting on Mill Skids—Management. Actual wages paid should be allocated to each section of the work and cost per 100 shown.

As to pre-war costs in this department: We have taken May, 1914, and May, 1918, as the comparison years and we find that wages paid compared as under:—

	1914	1918
4 Crossentters were paid	11/-	15/-
Ropemen (Hauling)	12/-	16/-
Hauler Drivers	11/-	15/-
Loco. Drivers	12/-	14/-
Skidmen	11/-	15/-
Tram Navvy	10/-	14/-
Management	£20	£28

Average increase 35 per cent.

When the cost per 100 on account of wages is known, it is necessary to take in GEAR PURCHASED, including such items as saws, wire ropes, blacksmith's repairs to blocks, hauler, and bush trucks, wire nails (where wood tram is used) and other such charges. We find increases in principal lines of hardware are:—

	1914	1918
Crosscut Saws	2/- per foot	4/6 per foot
Wire Ropes	65/- per cwt.	300/- cwt. (also quoted up to 560/- per cwt.)
Wire Nails	15/- cwt.	60/- cwt.

We have not taken in STEEL RAILS, as this is nearly always a capitalisation charge, but where any need replacing the cost is £8 in 1914, as against £25 in 1918, an increase of over 200 per cent.

To allocate to any one month the cost of gear as above, an average of the prior 12 months cost should be taken.

Some companies debit their monthly cost account with each month's purchase irrespective of whether it is a heavy month or not, and they then take the average of their six or twelve months' costs.

This to our view is not right, as the miller has to wait six months before he knows just where he is; whereas if he takes the average of the prior twelve months he gets very near the mark right off.

The cost of gear is a most important one and every means must be taken to ascertain that all charges are in, as often it will be found that the upkeep of bush plant will run into half the wages cost.

Milling and Yarding.

The separate heads here are:—Milling—Yarding—Planing—Handling Orders Out—Cost of Gear Used in Upkeep of Mill (circular saws, belts, wire ropes for winches and carriages, files, machinery, repairs, etc). Here a divergence of opinion arises.

Should we take our basis tally as a credit to wages of planers and cost of handling outwards? Some mills take their basis right through the cost. We contend that the head machinist should take a daily tally of timber run through his machines to base his cost on, and that the handling outwards cost should be based on the actual sales.

The increased wages cost in this department is:

	1914	1918
Head Breaking Down	11/6	15/-
Pacific Lever	12/-	16/6
Pacific Carriage	11/-	14/-
Head Bench	14/-	16/-
Tail Bench	12/-	14/-
Engine Driver	11/-	15/-
Slabs	10/6	12/6 av.
Machinist	15/-	16/6
Tail-out Machines	5/-	8/-
Head Orderman	12/-	15/-
Stackers	10/6	12/6
Management	£20	£28

Average increase wages 36 per cent.

Hardware costs compare:—

1914	1918
Wire Ropes .. 65/- cwt.	240/- to 500/- cwt.
Circular Saws, 42in... £5 5/-	£12 10/-
Belting—Increase 100 per cent.	
Files .. .. 6/9 doz.	19/6 doz.
Oils—Increase 25 per cent. on contracts (up to 50% now)	
Bar Iron Steel 15/- cwt.	35/- cwt.

Loading.

We now come to the last department of cost and almost every mill has different methods of loading out to their customers. In our case from the yard to the battened truck we do this work by contract at per 100 feet actual measure and our cost is simplified, but in other cases where Government waggons are run to the yard by siding or where timber has to be otherwise handled, the wages of orderman and loaders must be kept separate.

This brings us to the total cost per 100 feet of sawn timber loaded into Government waggons, and it is recommended that each month's cost be compared and the comparison shown in drawing up the statement. There is not so much in the making up of a cost account as there is in using a method of bookkeeping whereby the figures we so urgently need are easily obtained and files easily scrutinised.

Standing Charges.

These should be kept separate from the milling costs, and if the cost per month of interest, depreciation, salaries, rates, travelling expenses, discounts,

fire insurance, stamps, telegrams and stationery be worked out, it is a simple matter to finally add this to the mill cost.

Accident insurance should be taken into account after the wages, and as this is at a fixed rate of 40s per cent., it is easily calculated.

The final cost is a total of royalty, milling cost, and standing charges

In these days when the accountant has almost enough to do without worrying about costs, he naturally turns to the simplest method when the job is called for and in this connection it might be mentioned that if the Wellington Timber Workers' Award provided for a twice-monthly mill pay instead of fortnightly, the trouble of the broken week would be obviated and the work simplified. The members of our associations could help the accountant and themselves a great deal by asking for this and seeing that the Auckland award provides for it, there seems no reason why the Wellington award should not.

Finally.

There has been no attempt here to show what the increased cost is, but it may be stated that cost accounts taken out on the same lines as herein suggested SHOW AN INCREASE OF NEARLY 100 PER CENT IN MAY, 1918, OVER MAY, 1914, and as stated at the outset this is at a mill where labour troubles have not been so acute, where hardware has been bought on the lowest market, and where the general cost of running is lower than the average.

A separate return taken out showing "Comparison of selling prices, 1914 and 1918 (copies hereto attached) show that we are not getting approximately 45 PER CENT. MORE FOR OUR TIMBER.

SCHEDULE NO. 1.

COMPARISON OF SELLING PRICES.

	April 1914	April 1915	Oct. 1915	June 1916	April 1917	July 1917	May 1918
	RANGITIKEI	GAMMANS			RANGITIKEI		
Bld. Ht. Rimu Scant'lg.	10/9	10/6	11/6	11/9	12/4	13/4	16/–
,, ,, Bds. & Plks.	11/9	11/3	..	..	..	..	20/–
O.B. Rimu Boards ..	9/3	8/6	..	..	..	..	14/–
O.B. Rimu Scantling ..	8/9	7/4	7/10	8/9	9/6	10/6	12/3
½in. Rough Lining ..	7/2	5/9	6/3	6/10	7/2	7/8	8/6
1in. Sarking	7/6	5/9	6/6	7/9	8/6	9/6	11/3
Rimu T.&G. Rustic. B.B	12/4	10/6	11/3	13/8	14/9	15/9	17/6
O.B.Mat. T.&G. ,, or B.B	10/9	9/9	10/3	11/3	12/4	13/4	15/9
O.B. Rimu Match Lin.	12/4	10/6	11/3	13/8	13/9	14/9	16/6
Clean O.B. Rimu Bds.	11/–	10/–	10/6	12/3	12/10	13/10	15/9
Ht. Rimu T.&G. Rustic	17/–	14/3	15/6	18/6	22/6	23/6	26/–
Ht. Matai ,, or Rustic	17/–	15/9	16/9	18/6	22/6	23/6	26/–
Dressing Ht. Rimu ..	15/9	12/9	14/–	17/–	20/6	21/6	24/3
Clean Ht. Rimu ..	17/6	16/6	17/–	20/–	25/–	26/–	29/–

The above are *nett prices*. The first list is Rangitikei Association off which 10 per cent. has been deducted, while off the latest lists 5 per cent. has been deducted as an average discount.

It will be noted that an average increase can only be taken on the number of feet of each quality sold at the time the lists were in force.

Sales at April, 1914 (pre-war) ruling rates total (as per Schedule 2) £1.495 15 0

Sales at May, 1918, ruling rates total (as per Schedule 2) £2.149 1 9

The actual increase on price lists is therefore 43.65 per cent.

SCHEDULE NO. 2.

COMPARISON OF SELLING PRICES.

Quantities taken are actual sales of these lines, May, 1918.

	1914 RANGITIKEI	1918	Quantity	At Pre-war List £ s d	At May, 1918 List £ s d
Bld. Ht. Rimu Scantling	10/9	16/	25.000	134 7 6	200 0 0
,, ,, Bds. & Plks.	11/9	20/	12.000	70 10 0	120 0 0
O.B. Rimu Scantling ..	9/3	12/3	57.000	263 12 6	349 2 6
,, Boards ..	8/9	14/–	10.000	43 15 0	70 0 0
½in. Rough Lining ..	7/2	8/6	23.000	82 8 4	97 15 0
1in. Sarking	7/6	11/3	2.500	9 7 6	14 1 3
Ht. Rimu T.& G. Rustic.	17/	26/–	14.500	123 5 0	188 10 0
Ht. Matai .. or ..	17/–	26/–	7.000	59 10 0	91 0 0
O.B Rimu T.G. Rstic. B.B	12/4	17/6	3.000	18 10 0	26 5 0
O.B Matai .. or ..	10/9	15/9	27.000	145 2 6	212 12 6
O.B Rimu Match Lining	12/4	16/6	23.000	141 16 8	189 15 0
Clean O.B. Rimu Bds.	11/–	15/9	58.000	291 10 0	417 7 6
Dressing Heart Rimu .	15/9	24/3	14.000	110 5 0	169 15 0
Clean Heart Rimu ..	17/6	29/–	200	1 15 0	2 18 0
			271.200	1495 15 0	2149 1 9

The increased return is shown above 43.65 per cent.

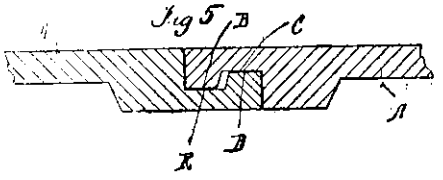
Therefore we do say the rise in selling prices is amply justified and that the sooner the miller does find out just what his timber is costing the better will he be prepared to meet arguments when the time arrives.

W. R. NANKERVIS.

Ohakune Junction, June, 1918.

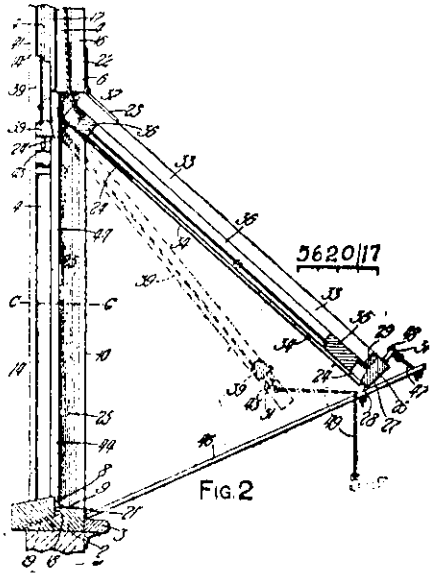
Patents of Interest to Builders.

Tile, Roof-ridging, Construction.—A patent No. 40358 has been taken out by W. T. Cowperthwaite of Mt. Eden, Auckland, according to which each tile at one of its ends has its under-surface formed with a lug projecting downward along its edge and with a depression within such lug, and at its other end has its upper surface formed with a similar lug projecting upwards and de-



pression. Thus, when the tile is arranged in position with the tiles at both ends one of its ends, it is said, will overlap with the adjacent edge of the next tile so that the lugs on the respective edges will fit into the respective depressions, while its other end will underlap with the adjacent end of the tile at its end, and the lugs of such edges similarly engage.

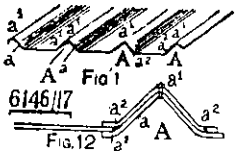
Sliding Sash Window.—A patent No. 5620 has been taken out by T. Burden and E. A. Martin of Victoria for a Sliding Sash Window. To enable the exterior of the window glass to be cleaned without the use of a step-ladder, a swinging cradle is hinged at its top to the window frame and accommodates the lower window sash so that by swinging the cradle inwardly the lower sash is carried with it.



The cradle comprises swinging stile-pieces **24** which carry a swinging inner bead section **16** and a swinging parting bead section **17**. The window frame has a vertical rebate forming an access to the weight passage-way, and the window sill **2** has a horizontal rebate to accommodate the lower end **26** of the cradle, while a drain **18** extends from side to side of the sill, and the sashes are held in position for cleaning by a prop **46**.

Water Heater.—A patent No. 39364 has been taken out by W. M. Early of Featherston St., Wellington. According to this invention, the liquid fuel is fed from a pressure-tank through a supply-tube to a generator which is preferably packed with asbestos. Leading from the generator is a connecting-tube controlled by a tap by which the supply of vaporized fuel is regulated. By means of this tap communication may be made with a passage through which the vaporized fuel will flow to a chamber containing a needle valve by which the flow of vaporized fuel is further regulated. A supporting-device is also provided, which may be integral with the generator. Such supporting device contains the mixing-tube and supports by means of brackets a casing, preferably lined with asbestos, within which casing the burner-box is contained. Surrounding the burner-box is a coil, into the lower end of which the cold water circulates from the bottom of a tank, and from the upper end of which the hot water circulates to a position at or near the top of the tank, a suitable draw-off tap being provided. The burner-box is provided with gauze or the like device to prevent lighting-back. Such burner-box may be made cylindrical, but the central portion may be made hollow in order to avoid the considerable accumulation of gas in the burner. The liquid fuel which is led to the generator is kept vaporized by a system of sub-flames either from the mixing-tube or from the burner-box. The burner-box may be made removable and another burner-box inserted in lieu thereof, suitable for heating a kettle or other vessel, which may be supported upon a suitable grating placed on top of the casing.

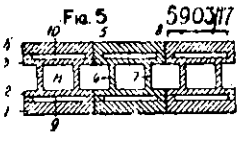
Asbestos—Cement Tile.—A patent No. 6146 has been taken out by Turner Bros. of England, which consists of a corrugated tile, or slab, for use as a substitute for sheet iron roof or wall covering, which is made of asbestos-cement, glass, or clay, and



is provided with one or more flat sided corrugations **A** tapering from the lower to the upper edge and adapted to bed closely upon one another.

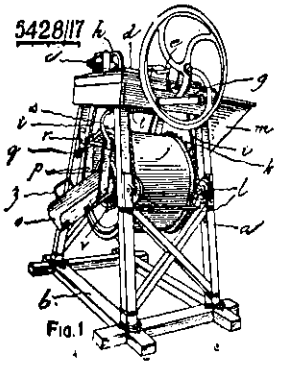
Sheets of plate glass (Fig. 12) may be secured by bolting a covering strip over the outer corrugation of a sheet or by bolting two inverted strips together.

Building Block.—A patent No. 5903 has been taken out by H. Grouroos, of Denmark, for building block which is provided with conduits for aeration, and a central cavity to receive cement in mass and reinforcing standards or rods.



The block is formed with walls **1** and **4** having connecting ribs **6** and **7**, while the air conduits **9** and **10** are connected together by lateral passages. Cement is poured into the cavities **11** which may also receive the vertical reinforcing bars.

Concrete Mixer.—A patent No. 5428 has been taken out by G. A. Pierce and F. Deague of Victoria for a concrete mixer. A machine in which a rotary drum **J**, having internal mixing



blades, is suspended in loops formed by sprocket chains or ropes **i** driven from a shaft **d**. The drum is prevented from moving longitudinally or laterally by the rollers **l**. The material is discharged by the mixing blades on to the shoot **o**.

Building Notes

AUCKLAND.

The question of new buildings for St. John's College was discussed at a recent meeting of Synod. The trustees intended to build a new and central block of buildings, containing students' and tutors' quarters, lecture rooms, etc., on the site of the warden's present house, and to erect a new house for the warden on the site of the old stone building. It was not proposed to interfere with the Patteson wing, except to complete the exterior, to close the present doorway into the Kinder Library, and to make a doorway and porch at the western end of the building. The trustees desired to retain, if possible, the shell of the old stone building opposite the main entrance, and to remodel it into a suitable dwelling-house. This, however, according to the advice of the architect, Mr. Patterson, seemed to be impossible, owing to the ravages of time. In the plan submitted by the architect, accommodation was provided for 52 students and two tutors, which, together with the Patteson wing, would enable the college to house 60 students and three tutors. The estimated cost of the whole scheme was £24,350. An amended scheme to provide accommodation for 36 students, apart from the Patteson wing, was estimated to cost £19,530. It was decided to go on with the latter scheme.

Mr. J. M. Walker invited tenders last month for enlarging Motor Engineering Works at Newmarket.

Mr. J. Currie called for tenders for additional storey and alterations to store for Mr. F. M. Winstone.

Tenders were invited by Messrs. Chillwell & Trevithick for electrical installation in Messrs Dalgety & Co's. new building.

CHRISTCHURCH.

Mr. E. J. Greenstreet invited tenders last month for the erection of a Cold Storage Warehouse for the Canterbury Orchardists' Co-op. Ltd.

Mr. J. S. Guthrie called for tenders for a motor garage and workshop in brick in Tuam Street.

Messrs. Collins & Harman called for tenders for the erection of buildings in connection with the Orthopædic Department at the Christchurch Hospital. The same firm called for tenders for the erection of additions to staff rooms at the hospital.

The Lyttelton Harbour Board called for tenders early this month for supply of 200 Iron bark piles 70 ft. long.

The Christchurch Creche & Kindergarten Assn. called for tenders for the erection of a Kindergarten School at Phillipstown.

The Public Trustee called for tenders for the erection of a Public Hall at Little River.

SOUTHLAND.

A new factory for Messrs. Fleming & Co. of Gore is being erected for the manufacture of "Creamoata" to designs by Mr. W. H. Dunning of Dunedin. The structural designing has been done by Mr. Blair Mason, engineer, of Dunedin, and Messrs. Fletcher Bros., builders, have the contract for the erection of the building. The new building will be entirely of ferro-concrete, practically fire-proof throughout. The foundations, which are now in, are sunk to a depth of 12 feet. The total height of the new structure will be 80 feet, comprising five storeys, each of 15 feet. The whole of the outer walls, with the exception of the structural piers, will be of glass, thus making the building what is known to-day as a "Sunlight" factory, and every known device for ample ventilation and general hygiene will be provided.

The kilns and general milling plant will be separated from the packing department by a fire-proof curtain wall, provided with self-closing fireproof doors. The roof of both silos and mill will be of concrete, as also will be all staircases and conditioning bins, while all spouts, conveyors, and elevators will be of steel. An electric lift will also be provided for communication between the different floors.

Power will be transmitted to the different groups of machines electrically from the main generator in the power-house.

As before, the whole of the handling of the raw material will be done automatically from the railway waggon to the storage silos, from silos to cleaning, grading, and conditioning

plant, thence to the automatic ovens and cooling apparatus, through the innumerable processes of hulling, purifying, and final rolling and dressing to the automatic filling, weighing and sealing machine, which turns out the finished packages. A special permit has been obtained from the authorities to import the required machinery in view of its use for the manufacture of food stuffs and to replace plant destroyed by fire.

DUNEDIN.

Some of the work recently executed and in course of execution by Mr. Basil Hooper, A.R.I.B.A., is as follows:—Concrete walling, iron gates, etc., in Queen Street, for Mr. Fleming; contractor Mr. W. H. Mills. Brick piers, iron gates, etc. at All Saints Church; also new stained glass window with new stone tracery, alterations to roof, porch, etc. Additions to garage in Heriot Row for Mr. G. R. Ritchie. Additions to Dr. Barnett's house, Stafford Street, builder Mr. C. Anderson. Repairs and renovations to residence in Melville Street for Mr. A. H. Fisher. Residence at Hampden for Dr. Barnett; builder Mr. C. Anderson. Designs are being prepared for the whole of the Chancel, and other fittings for the New Cathedral, consisting of Pulpit in stone, marble and N.Z. serpentine; Prayer desks, Choir stalls, Altar, Reredos, Sedilia and Piscina, Credence table, Litany desk, etc. Tenders will shortly be called for New Wool Store at Port Chalmers for the Shaw, Savill and Albion Co. Also garage at St. Clair for Dr. McBride. The New Cathedral is nearing completion, and now that the long delayed glazing is mostly in position, a start can be made with the wood blocking of the floors, marble paving for passages etc.

H. Mandeno reports the following works completed during the year:—Banking Premises for the Bank of New Zealand, Mosgiel; cost £4100; W. H. Naylor, contractor. Detached Class rooms, Otago Girls' High School; cost £1150; W. McLellan, contractor. 12-Roomed brick residence for Mrs. Watson, Dunedin; D. O'Connell, contractor. Extensive alterations and renovations to the offices of National Mortgage & Agency Company, Dunedin; G. Simpson & Coy., contractors. Additional open air sleeping balconies at Archerfield for Mrs. Nisbet; R. Crawford & Coy., contractors. Additions to Holy Cross College, Mosgiel; D. O'Connell, contractor. Extensive alterations to premises for Messrs. Butterworth Bros.; cost £2500; W. H. Naylor, contractor. Alterations to offices for Messrs. Murray, Roberts & Coy.; G. Simpson & Coy., contractors. Alterations to offices for Messrs. Wright, Stephenson & Coy.: W. McLellan, contractor. Renovations to residence, Roslyn, for Mrs. J. C. Begg. Assembly Gymnasium Hall, King Edward Technical College; cost £4400; Geo. Gibbs, contractor.

The same Architect has the following works in progress:—10-roomed brick residence and garage for C. F. Oliver, Esqr.; W. H. Naylor, contractor. Extensive alterations to residence on North Taieri for Chas. Findlay, Esqr.; Geo. Gibbs, contractor. Renovations at Corstorphine for the Trustees in the Estate of the late John Sidey; W. McLellan, contractor. Concrete Church at Roxburgh; cost £1785; D. T. Boyd, contractor. Stone residence for Jas. A. Roberts, Esqr. at Gladbrook Station, Middlemarch; D. O'Connell, contractor.

Mr. Mandeno is at present preparing plans for the following:—Girls' Hostel to accommodate 30 students with provision for extensions, for King Edward Technical College. Alterations to premises at Wakari for farming students, for King Edward Technical College. Six class rooms in stone at Otago Boys' High School with provision for further extension. New lavatory block, Otago Boys' High School. New shelter shed and dressing rooms, Otago Boys' High School. New premises for the "New Zealand Tablet." Residential buildings for the Christian Brothers. Additions to seaside cottage Messrs. C. Seelye and J. McKechnie.

Mr. E. W. Walden reports that he has a number of alteration jobs in hand, but few new buildings. He is of opinion that there will shortly be a big improvement in the building trade.

The first of a series of homes for boys to be established by the diocese of Dunedin was opened at Vauxhall by the primate (Dr. Nevill). The property which has been secured for the purpose is beautifully situated. It adjoins the Grant's Braes property on which the Presbyterian Home for Boys stands. The area secured measures 10 acres. The present building is a substantial brick house of seven rooms, built with every convenience and modernised in every respect. It is intended to accommodate some 15 boys, and it is the nucleus of a comprehensive building scheme which include four or five large buildings which will provide homes for from fifty to a hundred boys. The work is

to be developed on the cottage system, tried and proved a success in England and Australia. Of the £10,000 required to finance the scheme £5,000 is already in hand.

HAWKE'S BAY.

Plans have been prepared for the consumption sanatorium to be erected by the Defence Department at Hutuma, a short distance from Waipukurau. The site is a sheltered knoll, and the land surrounding it comprises an undulating area of 360 acres, sunny, and affording fine views of water and the country-side. The main block of buildings will be 300 ft. long, and will contain one, two, and three-bed wards for soldier patients who require constant attention. There will be wide verandahs and corridors, with separate storage accommodation for kits, linen rooms, bathrooms, and lavatories. The kitchen and dining blocks, running at right angles to the centre of the main building, comprise separate dining-rooms for officers, patients, and orderlies, and separate serving and washing-up rooms. Ample provision is made for fresh air, and for the separate storage of patients' dishes. In the kitchen there is excellent storage and modern cooking appliances. There is also an administrative building in the form of a detached wing of the main building. It comprises offices, laboratory, visitors' waiting-room, etc. On the corresponding wing are the sleeping quarters of the n.c.o.'s and orderlies. Connected by verandahs with the main building are sunny two-bed shelters, and dotted about the grounds are the single-bed shelters for patients who require less attention than those in the wards.

OAMARU.

Tenders were invited by Mr. Dunning of Dunedin for the erection of business premises at Oamaru.

ROTORUA.

Tenders were called last month for the erection of new Y.M.C.A. Institute at Pukeroa Hill, Rotorua.

Tenders have been accepted by the Government for the erection of four workshops for soldiers under treatment at Rotorua. The first building will have accommodation and fittings for clerical work, saddlery, splint-making, and handicraft. The second will have provision for boot-making, tailoring, cigarette-making, hairdressing, plaster-cast-making, and a photographic studio. The third will contain carpentry and basket-making shops. The fourth structure will comprise black-smithing, welding, painting, and enameling shops. The approximate cost of the four buildings is £3000.

TAURANGA.

Tenders are invited by Public Works Dept. for the erection of Apiarists Cottage at Horticultural Station.

WAIKATO.

The Waikato County Council invite tenders for the erection of a re-inforced concrete arch bridge over the Waikato at Horotiu.

WELLINGTON.

In this issue is an illustration of the new R.C. Church to be erected on the site of the recent St. Mary's which was burnt down some months ago. Mr. F. de J. Clere, F.R.I.B.A. is the architect. It is proposed to erect the whole church as illustrated.

Messrs. S. George Nathan and Co. have just purchased the premises adjoining the Bank of Australasia in Customhouse quay, which have a frontage of 30ft. 4in., with a depth of 86ft. 9in. There is a wooden building in the front and a substantial brick structure at the back. It is the firm's intention to occupy the brick building as soon as they can get possession. Extensive alterations will have to be made. The price paid was between £7000 and £8000.

A temporary building is being erected in which the Defence Department proposes to house the Pay Branch, in conjunction with Base Records, at a cost of some £12,000. Timber is being stacked in Whitmore Street, which is to be partly occupied by the new building.

The demand for houses is exceptionally pronounced, and very high rents are obtainable in Wellington, but the cost of building at the present time is out of all proportion to the possible return on the money invested in house building. An architect recently called for tenders for a five-roomed house on very modest specifications, and the lowest tender was £925, and for a three-roomed cottage on a similar scale the builders wanted £100. The rentals are high and quite a decent living is made by a great many people letting rooms.

WHANGAREI.

The foundation stone of the new male ward of the Whangarei Hospital was laid last month. The ward which is to cost £6,500 is styled "The Commercial Traveller's Ward" who were mainly responsible for the collection of the funds to build the new wing.

NOTICE.

TO OUR READERS!

The Publishers of "N.Z. Building Progress" announce that from and after the June issue, owing to the enormously high cost of paper, the price of "Progress" will be **9d.** per copy, or by subscription, **paid in advance, 8/6 post free** per annum.

Professional Directory

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