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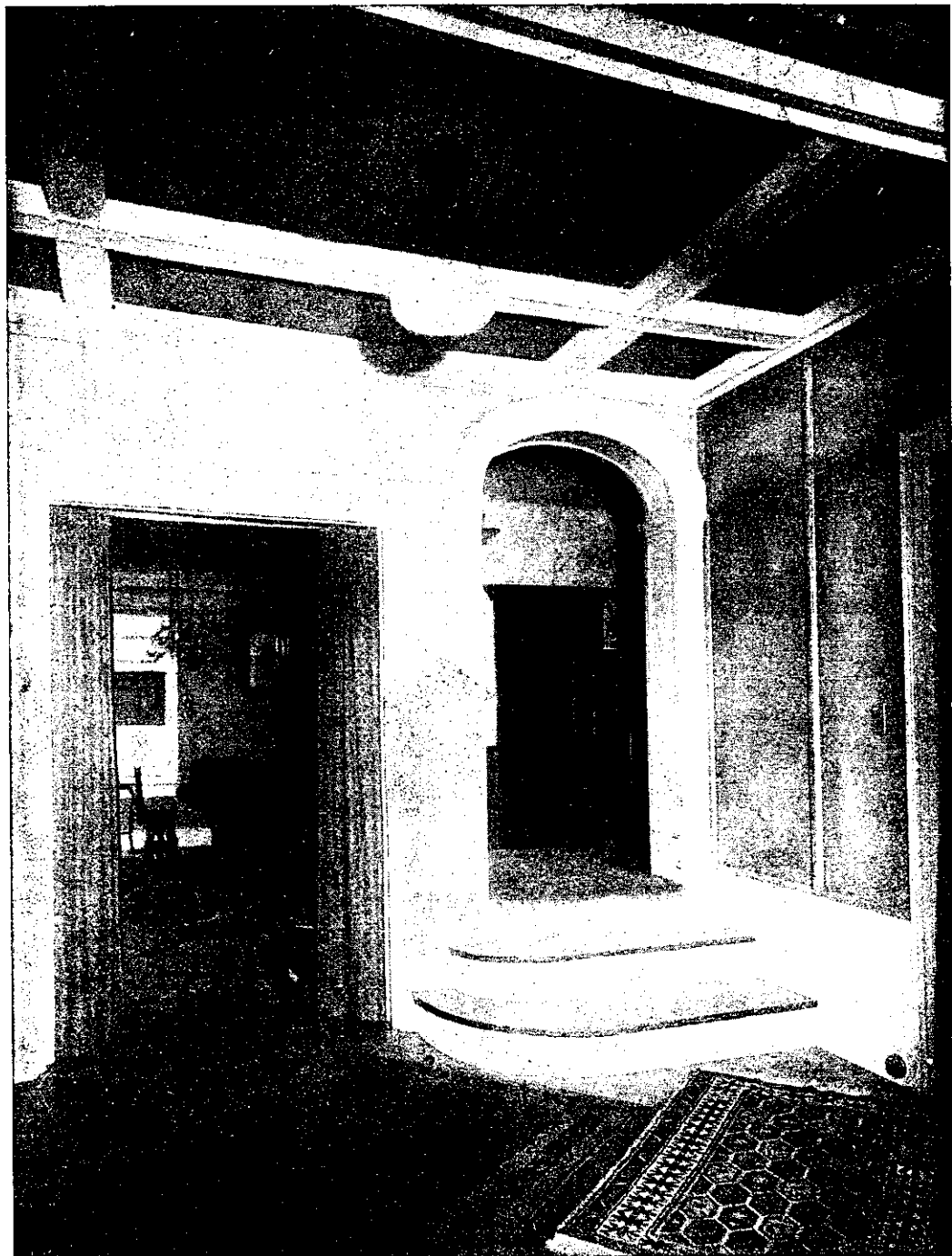
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*Official Journal of the Dominion Federated Sawmillers' Association (Incorp.).*

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# · N · Z · BUILDING · PROGRESS

## THE CEMENT INDUSTRY.

Our readers will watch with great interest the future developments of the charges made by Mr. Masters, Member for Stratford, against the principal cement manufacturers of New Zealand. It is alleged that they have operated a mutual agreement for restraint of trade which has had the effect of maintaining high prices by rigorous curtailment of output, this going so far as to cause the shutting down of the Golden Bay works, and the throwing out of employment of a couple of hundred men when the economic position made it particularly hard to get another job. The Government—itsself one of the largest users of cement in New Zealand—promptly agreed to have an inquiry made into the allegations, and we have already heard from some of the parties to the agreement that it does not bear the objectionable construction put upon it by the Member for Stratford. As these things will have to be argued out before a proper tribunal, we will not attempt to anticipate its conclusions. One or two general observations are, however, not out of place. Some years ago, the interest of New Zealand capitalists in the building material of the future was thoroughly aroused, and ample supplies of money became available to develop cement manufacture in accordance with the prospective demand. Very large sums indeed were invested in the industry, and very large sums have been lost. Apparently the industry became seriously overcapitalised, and the strongest people in the business dropped their rivalry and came together to save the position. Whether, in their defensive efforts they made an offensive upon the consumers' pockets, we leave the coming investigation to decide. There seems to be some parallel between the cement situation and that of the flour-milling industry about the year 1907. New Zealand millers were dealt a severe blow by an Australian tariff on imported flour. With this market cut off, the New Zealand flour-milling industry found itself in a position which threatened speedy ruin. The milling plants were sufficient to supply thrice the requirements of the local market, consequently the millers entered into a mutual agreement for reduced output and the prevention of price-cutting. Com-

plaints of exploitation soon arose, and the result of an investigation was the passing of the Flour and Other Products Monopolies Prevention Act of 1907, which enables the Government to deprive the industry of tariff protection if it is evident that the tariff is being used to push prices in New Zealand to a point comparing unfavourably with outside supplies under normal conditions. The tariff protection to cement was suspended for quite a long period during a shortage of New Zealand cement. This shortage was primarily due to coal difficulties. Approximately 15 cwts. of coal are needed to produce a ton of cement. The Board of Trade, in conjunction with the Coal Control organisation, made special arrangements to keep the New Zealand cement works fully supplied with fuel. It was expected that the manufacturers in New Zealand could then cope fully with the demand. Eventually the demand fell off seriously, and then began the organisation of the cement industry which had led to public criticism. Whether these protective measures went too far, investigation will eventually show.

## TIMBER COSTS AND PRICES.

The Board of Trade has done some valuable investigating work in connection with important New Zealand industries such as coal-mining, woollen manufacturing and timber-milling. These inquiries, in which skilled accountants with a proper knowledge of costing take part, will give the public a fairer view of things than can be obtained through the arguments of directly interested parties. The public is not disposed to listen patiently to representatives of the sawmillers seeking to justify increased prices; nor do they attach much credence to denunciations of profiteering from other quarters. But when a State Department looks into the position with statutory authority to demand books and papers, its conclusions must be accepted with respect. The Board of Trade has permitted several increases in timber lists, and it justifies this course in a long memorandum just published, in which the industry is very closely analysed from the point of view of production costs. The result goes to show that New Zealand mills are not working, in the main, on a very wide

margin of profit, especially as the industry is dealing with a wasting asset, which makes the problem of maintaining a supply of its raw material more expensive as time goes on. It is admitted by the Board of Trade that had the timber industry been able to charge f.o.b. prices for its output, the application of export values to local supplies—as in the officially accepted case of butter and cheese—would have made things much worse for the New Zealand consumer. Royalties, cutting and handling charges, supervision, and overhead charges are brought into the Board of Trade calculations. Variations in freights and royalties affect the net result with different mills, but taking all the facts into consideration, the Board (which sets out the facts in careful detail) comes to this conclusion:—“As already intimated, as the result of the investigations made, the Board is satisfied that when all the circumstances are taken into consideration only a reasonable profit has been made generally; but those mills that are working on rights acquired on advantageous terms years ago are earning fairly lucrative profits as compared with the mills working under current royalty conditions.”

#### PRICES NEAR THE LIMIT.

Details of working costs of two North Island mills are given in the Board's report, supporting their conclusion that although prices have increased, profits have not gone up. Then the report analyses carefully the costs and average prices realised by a typical South Island mill, the efficiency of which, it states, is probably above the average. Thus the figures relating to this mill may be taken as one of the fairest, judged from the consumers' point of view. They are as follow:—

##### Production Costs per 100ft. Cut at Mill.

	Year 1919.	Year 1920.	Year 1921.
Logging ...	33.58	43.97	63.90
Milling ...	36.17	34.11	50.72
Yarding ...	3.86	4.02	5.09
Loading ...	0.95	1.21	1.38
Royalty ...	6.01	6.00	6.10
Depreciation ...	5.77	5.64	6.18
Overhead ...	13.00	19.00	19.00
Income tax ...	9.00	15.00	13.00

Total cost	106.34 (8/10)	128.95 (10/9)	165.37 (13/9)
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##### Average Prices Realised on Trucks at Mill.

	Year 1919. s. d.	Year 1920. s. d.	Year 1921. s. d.
First-class ...	15 11	15 6	18 2
Second-class ...	11 0	11 4	13 11
Third-class ...	—	—	12 8
All-over average ...	12 9	15 0	16 3

This table is significant in the way in which it shows how the stringent financial conditions have prejudiced timber milling. At one stage, the mill could sell its output straight off the saw; now the lessened demand has necessitated extra handling to stack, and the expense of financing marketable stock for a period. A third grade of timber has come into the count, showing an improved utilisation of the product. But the all-over average price shows a margin of only 3s. 6d. over cost of production—not a heavy margin in such an industry. The first-class timber realised 18s. 9d. per 100ft. on the trucks at the mill. Railage from Ohakune to Wellington, over 200 miles, is 4s. 8d. per 100, but the West Coast miller has to pay 7s. 6d. per 100 for sea freight. Taxation has also been a heavy burden. Every factor in the business has made for increased expense, until the industry has reached the point of not being able to carry anything more. What is the remedy? The Board of Trade states it in plain terms:—“As a counter-acting influence to the persistent effect of the law of diminishing returns, thereby attempting to prevent prices from going still higher, and with a view to the conserving of our timber supply by the elimination of waste, the Board of Trade is going into the question of improving and standardising the system of costing with the object of improving the efficiency of the mill organisation generally, and it is also urging upon millers the adoption of a uniform system of measurement with the idea of establishing standards that will tend towards a reduction of the loss in cutting. The price of timber is approaching what may be termed the marginal utility point; hence it is imperative, in the interests of the millers, of the industry generally, and of consumers, that no effort should be spared to increase the efficiency in production and thereby bring about a lowering of the cost.”

#### RAILWAY COMMON-SENSE.

An announcement of changed policy in regard to the construction of new railways will be received with satisfaction by the general public. The Minister of Public Works (Hon. J. G. Coates), who has brought the revivifying vigour of youth to the portfolio, is not going to authorise further lines simply on the dictum of members of Parliament and other people who can put pressure on the Government. His plan is to have suitable routes surveyed, but before deciding to placate the local demands for a share of the public works pie, he will refer the whole proposal to the Railway Department, to decide whether the conditions of traffic running have been met in the detailed survey, and what will be the running cost. Then the proposal goes to the Department of Agriculture for a report on the productivity of the area to be served, and its capacity for providing payable traffic if the line is built. That is what any business man would do, and it is consoling that these hard times have produced a change to business methods in Government circles.

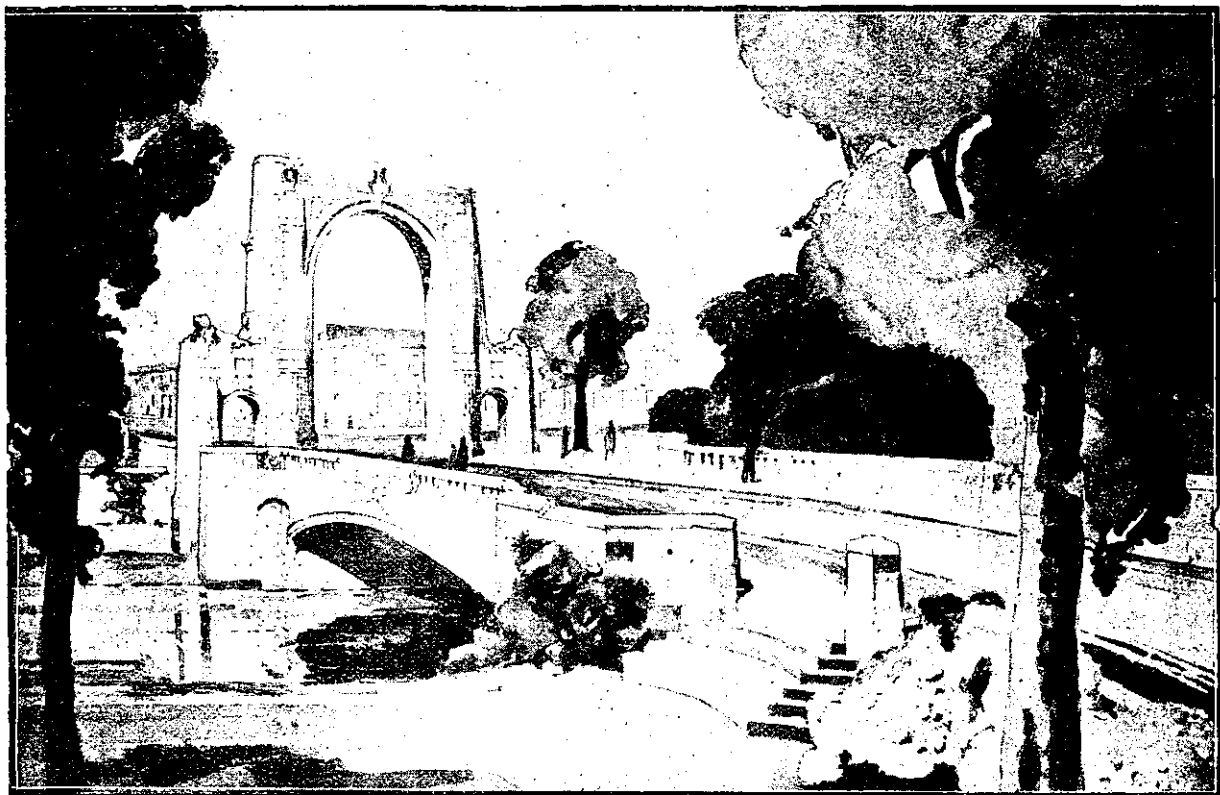


# The Christchurch War Memorial Competition.

The design for the Christchurch War Memorial Bridge Competition, which was won by Messrs. Prouse and Gummer, of Wellington and Auckland, is reproduced in this issue. The assessor for the competition was Mr. Leslie D. Coombs, of Dunedin. Twenty-four designs were sent in, the first prize being £100 and the second £50. The designer's notes explaining his drawings run as follows :—

## UTILITARIAN REQUIREMENTS.

These requirements have been accepted as the basis of the scheme. The river has been spanned with one arch 11ft. 6in. from water level to crown and of 40 feet span, a dimension which is the average width of the river at this point. As the variation in water level is so slight this is deemed sufficient. It is felt that a single span has the advantage over a series of arches, in creating an impression of ample passage way for boats, and in obviating the necessity for piers in the river, which, with the long length and comparative smallness of span of the arches, would give the appearance of culverts rather than that of



Winning design, by Messrs. Prouse & Gummer, Architects, of Wellington and Auckland.

The author feels that this problem calls for the fullest knowledge and most delicate handling in order to meet adequately the utilitarian requirements of a thoroughfare bridging a stream, and to express the highest emotional architectonic qualities necessary in such a permanent record of the Great War. His endeavour has been to make lines of principle in architectural and engineering design the governing factors in the whole scheme rather than to produce a design based upon traditional architectural features which may or may not have any direct relation to the problem in hand, either as structural necessities, or as providing some link with the past, which has its present-day significance. His endeavour has been to bridge the stream adequately, to provide a memorial of the Great War, and to wed the whole, not only to its immediate surroundings, but to the town at large.

a bridge. It is considered that the real bridge impression is created by the feeling of "span," which necessitates the use of an arch for the bridge not less in span than the width of the roadway above. This feeling of "span" is perhaps a relic of the days when primitive man felled a tree across a stream, but whatever its origin, the length of line and grace it gives are the legacies it has left in the most successful bridge designs. The author's reading of the problem is not that he is to provide a bridge on a main thoroughfare from the town to the Park or a tramway route, which thoroughfares are to be found in adjacent streets, but rather the provision of a bridge leading to the more quiet residential quarters between the river and the Public Gardens; a lay-out rather more intimate in feeling than would be possible with a main thoroughfare. Thus he has made his roadway on the bridge 23ft. wide

and the side arches 6ft. 6in. wide. It is obvious that the design is elastic enough to allow of the modification of dimensions as more particular knowledge of requirements demands. The widening of the footpath east and west of the bridge is eased at its juncture with the bridge proper. This easement is effected by means of squinch arches (see elevations). The roadway from the overhead arch to centre of the bridge has a grade of 4in. in this length. This grade allows of slight increase in height of the arch of the bridge, but also offers more effective drainage than with the level causeway. In such a length this rise would not be appreciable to the spectator. On the west side of the bridge the grade is 1 to 28. The requirement of an overhead arch at the eastern approach of the bridge makes a quick turn necessary in the road to the bridge from south Oxford Terrace. Special care has been taken to provide a line of footpath kerbing at this juncture which will make a ready easement for vehicles coming from this turn on to the bridge. It is also remembered that vehicles so approaching have an almost open view along south Oxford Terrace of all traffic on the bridge.

#### THE EVOLUTION OF THE DESIGN FROM FACTORS OF SITE AND UTILITY.

Though the bridge and overhead arch are but two elements in one composition, they are dealt with separately for the sake of clearness. "Line" in this bridge, in the sense of obtaining a natural and easy-looking access from one bank to the other, has largely dictated the shape of the arch for the stream and the run of the parapets. It will be noticed that, taking the centre line of the bridge as a base, the river flows at an angle of 30 degrees. This fact provides the basis of the design in plan and elevation, and all planes in the bridge and overhead arch have some relation to it, and are, therefore, complementary to one another, being in plan either at 30 degrees, with regard to the direction of the bridge, or at some multiple of this angle, as 60, 90, or 120 degrees. The plan is, in fact, built up on the angles contained in the hexagon (which form has been adopted in the main piers of the overhead arch), and is carried out to the smallest detail. The author believes that the most successful bridge designs are those which depend entirely on the line of the arch or arches, together with the run of the parapets for their effect. In this case especially, he has felt that undue elaboration of the parapets or spandrels of the bridge arch would mitigate the emphasis which he feels should be found in the overhead arch as the climax of the composition. As a consequence, the enrichment of the bridge centre mainly in the central panel with the inscription: "*Hunc Locum Inimbrant Nomina Magna*" (great names overshadow this spot), and under, a decorative treatment of the rosemary plant (for remembrance) over the coat of arms of the city. This quotation has a special significance through its position over the large shadow of the arch of the bridge. It suggests that the spirit of great men is memorialised therein. The bridge has not been considered simply as the quickest means of getting from one bank to another. It is a spot where one feels one would rather walk across than motor across, hence the comparatively wide footpaths to the width of the roadway. The widening out of the footpath is, the author considers, a desirable feature. It provides an additional lead in from the south Oxford Terrace footpath, and it does for the plan at this part what the buttressing to the south pier of the overhead arch does for this portion of the lay-out: in other words, taking the centre line of the overhead arch as the centre of gravity of the composition, this widening on the flat balancing the weight of the height of masonry at the north end. Further, it provides an open space where people so inclined could sit (were an appropriate seat provided), a little removed from the public way, or perchance lean over the parapet, with the branches of the trees overhead and the fitting lights and shade and reflections in the water. Flowing water has always been a great attraction to the average human being. One has only to think of some of the most successful medieval bridges, such as the charming little three-way bridge near Crowland Abbey, in Norfolk, to the larger erection at Monmouth, and also that at Semur, in France, to realise how much the success of these

bridges depends not only on giving adequate passage to man and beast, but also to their absolute oneness with their surroundings and to their ability to make the beholder appreciate and feel in intimate and harmonious relation with the whole scene. At all intersections of the bridge and the bank, the footpaths are widened, and this serves to link the bridge to the bank naturally, and also gives a buttress-like effect to the abutments of the bridge, and attractive modelling to the elevations from any point of view. This on the north elevation leads directly to the buttresses of the overhead arch, making the latter and the bridge comprehensive in treatment.

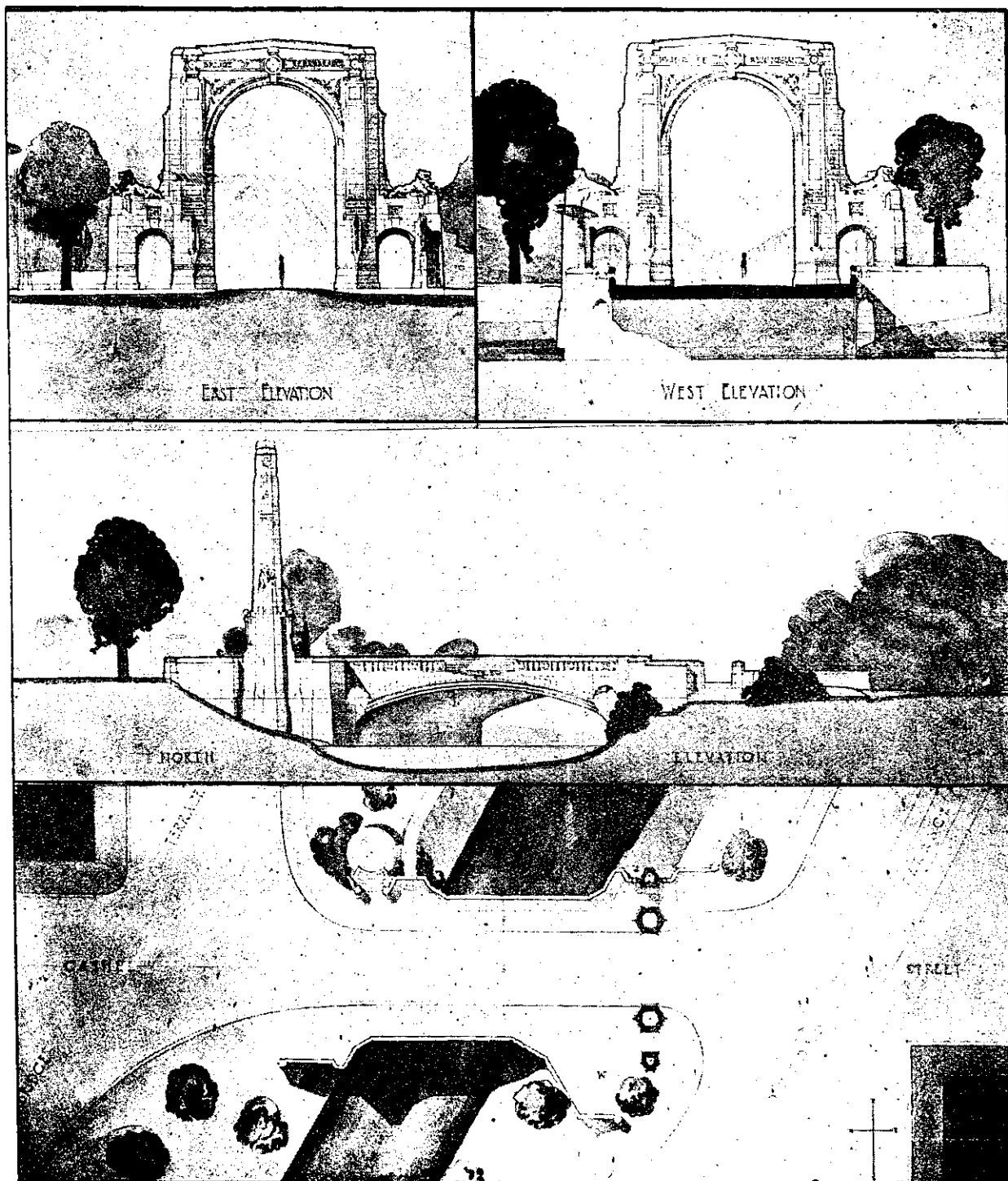
#### OVERHEAD ARCH.

In this the author feels that the problem calls for a treatment in which the arch motive is predominant, in which all the supports or abutments possess some relation in dimensions to the stresses generated by the arch, as opposed to the treatment of a simple arched opening in a wall. The nearest approach to this use of the arch to the author's knowledge has been developed in the cross section of the Gothic Church. The arch, fully used, expresses as no architectural motive can, endless activity, striving; it symbolises life itself. Thus the author has attempted to use the arch motive, and wishes it not only to appeal and impress by its light and shade and detail at comparatively close quarters, and from the long vistaed views, but also as a symbol of the Great War. He believes it silhouettes and stands adequately by its own abutments without any crude excess of materials. It has been studied from every angle in an endeavour to obtain as attractive a modelling and play of light and shade as possible, particularly has the juncture with the bridge been considered in order that the quality of "oneness" should be imparted to the whole. In passing it should be noted that the author has tried to avoid all heavy or any traditional architectural forms devoid of significance in connection with this memorial. The ostentatious and somewhat brutal glorification of war and the expression of overwhelming might which the average arch of triumph typifies has been avoided, and an attempt made to glorify the deeds of war rather than war itself, and to do homage to a victory of right rather than of might. Practically every detail is the outcome of the adoption of the hexagonal form of pylons to the main arch, which as stated previously was derived from the angle which the river forms with the line of the bridge. It will be noticed that in elevation this hexagonal plan by its light and shade emphasises the way through the arch. Commemoration purely rather than ideal symbolism has been attempted in the details of this arch. In a memorial column the symbolising of ideal human aspirations in the highest possible form seems perfectly appropriate. People of necessity go round a column and in such circulation there is a suggestion of reverence. People go under or through an arch, perhaps in motor cars in this case, consequently a sense of propriety seems to forbid highly emphasised sculpture of a particularly spiritual character. One never rushes through a cathedral. Adequate symbolism, however, there is. The pylons on either side of the main arch carry up-lifted torches typifying the everlasting remembrance of all that the names of the chief battle fronts on the panels above stand for. Above these panels the pylons carry up as main abutments of the arch until they terminate in a bronze band, nearly the width of the monument, in which the words "Bridge of Remembrance" are worked. The band mates with the symbol of the Cross, the emblem of sacrifice, in the centre. The downward stem of the Cross forms the keystone of the arch. The arch typifies life: the idea to be conveyed is that the spirit of sacrifice is after all the basis of human character. The minor arches spanning the footways have above each a panel in which the British Coat of Arms is inscribed. Terminating the buttresses, in which the minor arches occur, are further symbols of the Empire: namely, the British Lion depicted fresh from conquest, pawing the honourable spoils of conquest, but with the rest of the body in full readiness for further action. The side elevations have the lions in full front view. Save for the modelling of the various parts these elevations are devoid in the main of sculpture until near the top, where the unlifted torch and the Cross, as the symbol of sacrifice, appear in slight relief.

## ELECTRIC LIGHTING.

The author is of the opinion that in the main the effective lighting of this bridge and its approaches might, considering the limited sums allowed for this scheme, be a matter for the City Council to undertake. The length of the bridge is such that if the approaches were properly lighted nothing more would be required. For purposes of

emphasis by night, however, this design allows for a bronze electric fitting, specially designed, fixed almost flush in the crown of the soffit of the overhead arch. This fitting would flood the roadway through the arch with light. This design also allows for one bronze wall-light on each side of the minor archway at the north-east end of the bridge (see drawings).

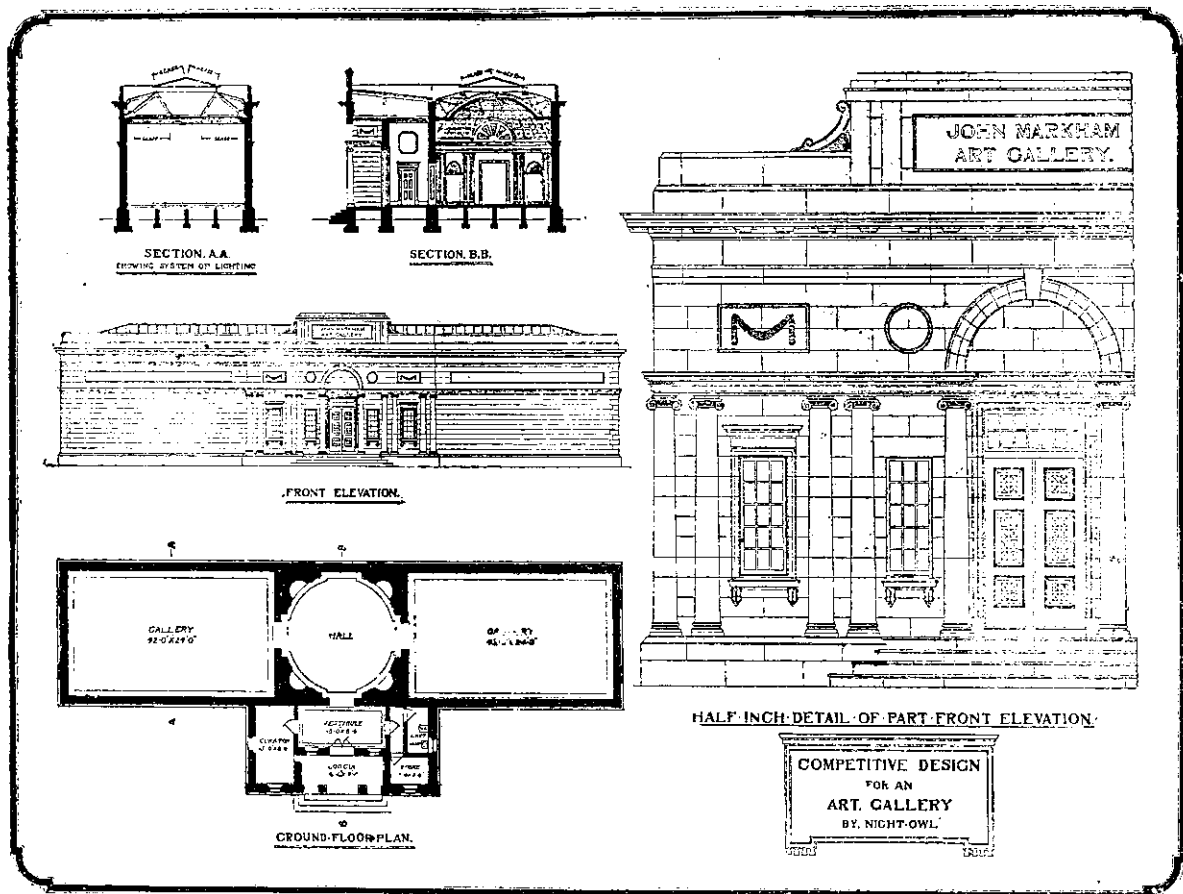


Elevations and Plan of winning design, by Messrs. Prouse & Gummer, of Wellington and Auckland, in the Christchurch War Memorial Bridge Competition.

## Our 77th Competition.

The delay in publishing the result of this competition has been caused by the recognition by the adjudicator, Mr. Reginald Ford, of two of the competitors' designs as emanating from his own office. He therefore asked Mr. W. H. Gummer, of Auckland, to judge the competition for him, and we trust competitors will

General Expression. A maximum of ten marks was allowed under each heading. Under headings Nos. 1 and 2 the designs were marked for the manner in which the plans met the requirements of gallery design and accessories. Under No. 3 heading marks were given for the design of elevations in the abstract, that is, for such matters as proportion, massing and knowledge of architectural forms and their uses. Under No. 4 heading marks were given for the way the whole structure expressed its purpose as a gallery for pictures and sculpture and also met the important requirement of the programme that it should be designed in the Italian style.



Design "Night Owl" by Geo. Drummond (with Mr. D. G. Mowat, of Dunedin), placed first in on 77th Competition.

appreciate the trouble and time Mr. Gummer has taken to assist them. Six designs were sent in, viz.:—"Night Owl," by Geo. Drummond (with Mr. D. G. Mowat, of Dunedin); "Italia," by Edgar L. Miller (with Messrs. Ford and Talboys, of Wanganui); "Palladio," by K. Dixon Box (with Messrs. Ford and Talboys, of Wanganui); "Iona," by Geo. Drummond (with Mr. D. G. Mowat, of Dunedin); "Bernini," by Ernest H. Hutton (with Mr. B. B. Hooper, of Dunedin); "Adonis," by D. O. Naughton (with Mr. E. R. Wells, of Wellington). Mr. Reginald Ford has given a second prize of 10s. 6d. to the winner of the design placed second by the assessor, Mr. Gummer, whose report runs as follows:—

### ASSESSOR'S REPORT.

The various designs were assessed under the following headings:—(1) Plans; (2) Sections; (3) Elevations; (4)

Name.	MARKS AWARDED.				
	Plans.	Sections.	Elevations.	General Expression.	Total.
"Night Owl" ...	9	8	5	8	30
"Italia" ...	4	6	9	9	28
"Palladio" ...	4	6	7	8	25
"Iona" ...	7	4	6	6	23
"Bernini" ...	7	4	4	5	20
"Adonis" ...	7	4	4	5	20

### PLANS.

"Night Owl's" plan is the best submitted. It gives adequate space for entrance, shows proper appreciation of the position to be occupied by the curator and also for lavatory and store accommodation. "Night Owl's" plan of keeping the curator and offices near the entrance is in a building of this size important. It makes these offices of ready access and it minimises supervision. The central hall indicates its purpose as the hub of the building. On the cross axis of the hall are to be found the galleries. These galleries are nicely proportioned for the purposes of displaying pictures, the distinctly oblong shapes providing the long and short distances which are necessary for

viewing various types of pictures. The planning of these galleries at right angles to the axis of the entrance also means increased effect of the vista from the end of one gallery to the end of the other, a thing which other students have failed to appreciate. "Night Owl's" plan is a little choked at the back of the hall. A slight projection here, perhaps with a panel or window in it, might have helped the modelling of this rear elevation and would certainly have helped to add value to the entrance axis. As planned the effect on entering is to feel that the axis stops dead, whereas some feature such as suggested might without being unduly prominent have closed this vista a little more gently. The central projection in plan might also have been restrained. As shown it is so great as to greatly foreshorten the wings from certain points of view, thereby creating the impression of an asymmetrical composition where symmetry is intended.

As "Night Owl's" plan is on the whole good, so the plan of "Italia" is bad. Its long loggia may be justified by the possibility of sculpture being placed under the side arches or by the effect of the steps in elevation, but its vestibule is cramped, there is no public access to the lavatory, and in an establishment of this size rear exterior steps and double doors are totally unnecessary. Supervision in any public building of this kind is an important consideration, and supervision usually entails the cutting out of all unnecessary doors. No doors should ever be planned that the public may mistake for entrance doors. However, "Italia's" plan is faulty, chiefly in respect to its galleries, which after all are the chief parts of the building. His galleries in plan approximate to squares and possess none of the advantages of long and short view points which a gallery longer in proportion to its width provides. Further, "Italia's" galleries are too split up and do not provide sufficient unbroken wall spaces for selective purposes for hanging pictures. His alcoves with detached columns suggest architectural effect only, and not as providing a perfect background to the chief things of interest in the building. "Italia" might remember that half round columns are rarely a success, as the silhouetting of the rounded form is largely lost against the wall at back, but the particular position of his half round columns in this hall is very unfortunate especially when considered in conjunction with the entablature. Further, if it is desired to obtain in elevation the effect of a semi-circular niche, it is necessary to have the springing point of the circle outside the line connecting the two sides of the niche: that is, that the niche in plan should be segmental and not semi-circular. Any circular form in plan looks deeper in elevation than it usually is.

The plan of "Palladio" has some of the faults of the plan previously mentioned. His lighting as shown on plan is defective in that at the ends of the gallery the light has to travel much further than at the sides. Lighting in any gallery should be as even as possible. It is a pity that "Palladio" had so obviously to construct the projections at the ends of his building.

"Bernini," "Iona," and "Adonis" in the shape of their galleries have appreciated the long and short view points necessary with regard to pictures, but "Bernini's" rear loggia is entirely unnecessary, and, like "Iona's" rear passage, is only obtained at the expense of space that might well have been allotted to the custodian.

If the panels shown on "Iona's" plan indicate the ceiling lights then there is no possible excuse for cutting off the corners which would seriously interfere with the lighting. The provision in double lavatories and the approach to these and the custodian though a private passage off the main hall is a good one in the plan of "Adonis."

#### SECTIONS.

It is not expected that the student should be acquainted with the fullest knowledge of the special construction and lighting of art galleries. It is pleasing, however, to note that these problems have been appreciated and attempted, and their influence is in most cases apparent as a matter of design.

"Night Owl's" section is a good one providing as it does the emphasis of light on the gallery walls and not into the centre of the floor. The proportions formed by the floor and ceilings are reasonable. Some freize, dado or plinth treatment is well advised, limiting height for

hanging pictures and framing, a space to be occupied by the latter. The lower freize perhaps might have tied through with the cornice of the dome of the hall. It is by such means the coherency and unity of design is expressed. All the competitors have shirked the problem of the dome except "Bernini," who in plan and section has a fully fledged dome upon pendentives. Other competitors have presented curved covers to their halls which approximate only to the true domical form but hardly touch the fringe of the possibilities of the latter in design and effect. It may be that "Night Owl" did not desire the additional height which pendentives would make in his section and elevation and that he planned for the circular in plan as well as in dome. Pendentives would have enabled him to have dispensed with the cumbrous mass of masonry which marks the corners of his hall.

"Italia's" and "Palladio's" sections are of heights consistent with the scheme, and they have been careful to conserve an alignment through the galleries and hall of the upper wall members, but "Italia's" lighting, though placed to illumine the walls, is apparently not continuous. His ceiling to the hall in section bears the imprint of a circular or elliptical plan whereas it is rectangular, and as such the effect is uncertain, particularly in the roof light.

The chief fault of the sections of "Bernini's" design is the inadequate lighting, the centre of the gallery being flooded with light and the walls by reason of the deep beams round the ceiling light being rather shaded. "Bernini" has been afraid to take the skylights necessary to galleries and develop them as architectural factors. He has hidden them away and lost two-thirds of his lighting area; also he has multiplied his plumbing difficulties. There is also a lack of coherence in this section: the two galleries and the hall appear as separate units which have been pushed one against the other.

"Iona's" section must also be largely discounted. Either he must mask his roof at rear as he has done in front and have complicated plumbing, or else he will have an unsightly roof at rear.

#### ELEVATIONS.

In the sense in which the elevations have been marked, that is, as architecture in the abstract, as matters of proportion, scale, light and shade and architectural detail the elevation of "Italia" receives highest marks. A slight fault is that the central arcade projects beyond the side wings whereas if the latter had projected three or four inches beyond the arcade, none of the gracefulness of the facade would have been lost, and a delicate appreciation of abutment for the arcade would have been shown.

"Palladio's" elevation is decidedly interesting with its unequal spacing of pilasters and good sense of scale. There is an undue feeling of abruptness and clumsy light and shade in the finishing against the larger pilasters of the entablature from which the central arch springs, and it is a pity that the slight projections at the end had to be so obviously constructed. "Palladio" would be well advised not to work in such relatively close scales as 1-8in. and 3-16in.

"Night Owl's" elevation would have gained higher marks but for his lack of appreciation of horizontal subdivision. His string course which forms the impost of his central arch is so relatively low as to cause an uneasy feeling of weight in the upper part of his facade, which entirely vitiates the grace which the length of line in his facade should achieve fairly readily. Let "Night Owl" also consider the somewhat crude way his skyline central panel is attached to the parapet; and also his pilasters and those of "Adonis," which are diminished and entased to obviate an optical illusion peculiar to columns as the result of being surrounded by space. A pilaster is attached: it is part and parcel of other masonry—it should appear as such and not as a column. There is no precedent in good work for the diminishing of the pilaster.

"Iona's" elevation is timid, and shows some desire to emulate some none too inspiring American-Italian work.

"Bernini's" elevation is not particularly imposing or interesting, showing a total lack of sense of scale in the extremely small figures and detail.

Lack of sense of scale and proportion are also chief faults in the elevation of "Adonis," whose entablature

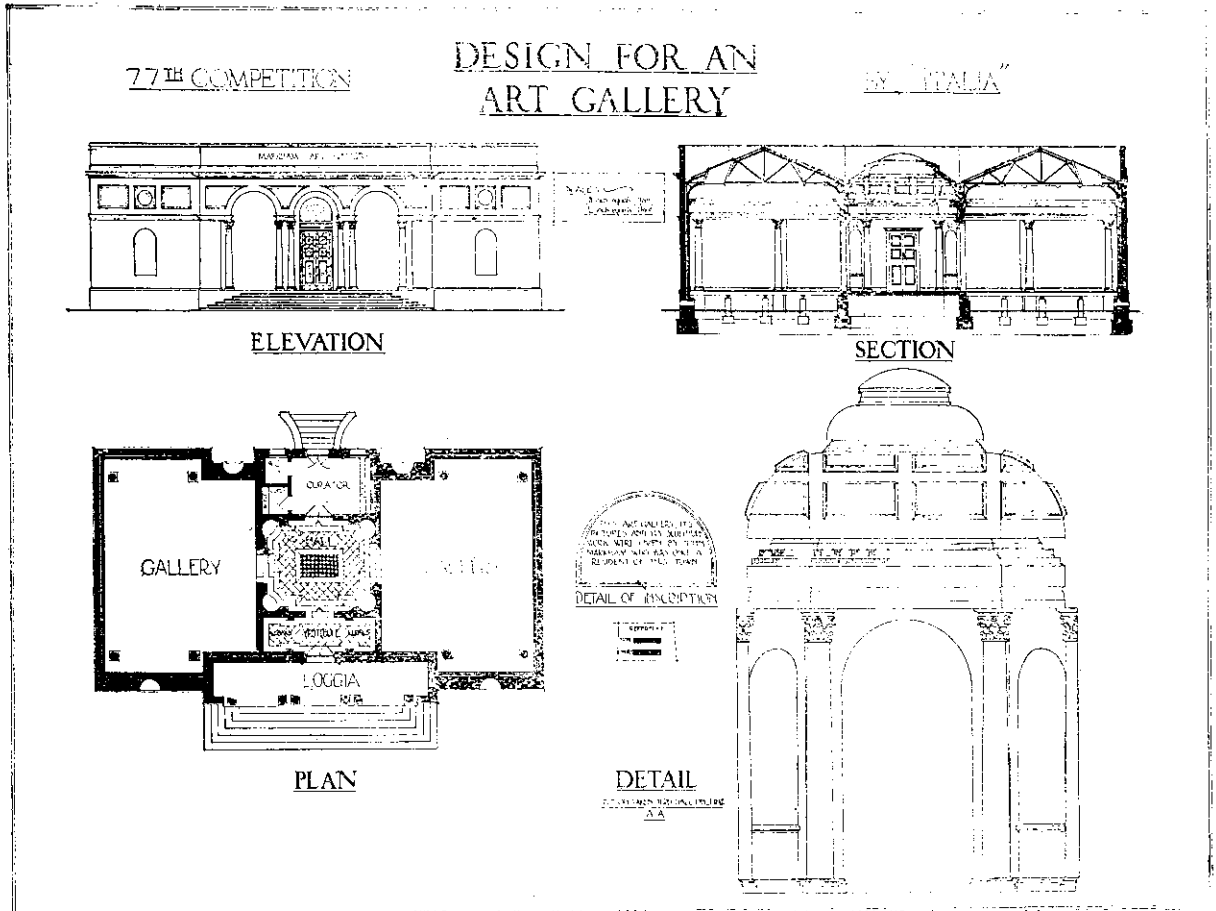
and balustrade require a pilaster and column treatment half as high again as is shown.

#### GENERAL EXPRESSION.

Under this heading, meaning the extent to which the designs express the Italian style and the character appertaining to any art gallery, "Italia" is most satisfactory. It was not expected that the competitors would slavishly copy the works of the Italian Renaissance but that they should adopt the principles underlying the use of architectural motifs which gave a particular character to the works of that period, to express modern knowledge of art gallery

this competition should be encouraged to work, and work hard, to master the historic forms of architectural construction and design and to learn architectural drawing, not by trying merely to make pretty patterns on the paper but by realising the form that is to be expressed. To this end much charcoal should be used for small scale as well as large scale studies. Shadows are sometimes not required in finished drawings, but in process of studying a problem they should be some of the earliest lines on the paper. They may tell some unpleasant truths, but they never lie.

W. H. GUMMER.



Design "Italia", by Edgar Miller (with Messrs. Ford & Talboys, of Wanganui), placed second in our 77th Competition.

planning and construction. This requirement of the programme has been very broadly interpreted by some of the competitors whose designs are reminiscent more of American and English classic architecture than of Italy.

Another requirement of the programme was a brief inscription indicating the origin of the gallery. This opportunity "Palladio" has appreciated best in the words suitably worked in a panel over the entrance:—"For love of Truth and Beauty John Markham gave this Gallery for the pleasure and inspiration of his fellow-townsmen." Thus is recorded simply and effectively the donor, and the purpose of the gift.

The assessor feels the limitation of pen and paper in these criticisms, but his desire is to be as helpful as possible to the student. The facility for design should be comprehensive: no student should be satisfied with a good elevation and a poor plan or vice versa. The ability to design is not gained in a short time, but the students in

"As a citizen of Christchurch and of New Zealand, I hope that there will never be standardised houses in this Dominion," said Mr. W. H. Winsor at a recent meeting of the North Canterbury Unemployment Committee. "As old Shakespeare said, 'Variety is the spice of life,' and I think it will be better for all if no standardised design is adopted."

In addition to the 10 houses at Northcote Road, Auckland, completed under the Labour Department's housing scheme, there are at present twenty-four in different stages of erection, some just having been started, and others nearing completion.

## Building Guilds—Their Working in England.

(Continued from September Issue.)

### DISMISSAL.

A worker may be dismissed for insubordination or for slacking. If in the opinion of the foreman any man is not "pulling his weight," he may be dismissed. Every man has the right of appeal to the works Committee or to his Union, and finally, to the Board of Directors. There have been very few cases of dismissal. An instance was brought to my notice of two labourers being reported for not "pulling their weight." These men were spoken to by the foreman, but apparently with little effect. Finally they were brought before the Works Committee, where they were told that if they did not work better, they would be dismissed. The result was an immediate improvement, and there has been no cause for complaint since with regard to them. An instance of a different kind came to my notice in Manchester. A workman boasted that during a recent sectional strike in the building trade he had been a blackleg. This matter was reported by his fellow workmen and, after inquiry, it was found to be a fact. He was brought before the Works Committee and dismissed from his job, and, later on, he was turned out of his Union.

It is not to be expected that all the men who volunteer for Guild work are enthusiastic guildsmen. But Guild enthusiasts set the pace, and this is bound to affect all who are engaged on the job. Moreover, lectures and discussions on Guild principles take place during the dinner hour.

### THE WORKS COMMITTEE.

Each craft on the job, in addition to electing departmental foremen, elects a representative on the Works Committee. This body deals with accommodation for the workmen, general welfare, demarcation questions, complaints, suggestions and, when necessary, with appeals against dismissal. An interesting demarcation question came before a Manchester Works Committee. On other jobs a strike had occurred owing to a dispute between the plasterers and bricklayers over the question of breeze slab interior walls. Both crafts claimed this work as their own. But on the Guild scheme, the secretary called the Works Committee into conference. The matter was settled without any trouble. A compromise was arranged whereby the interior walls were left to the last as jobs in reserve for bricklayers on wet days, but otherwise the plasterers were to regard it as their work. This arrangement is said to have worked admirably, without the least friction.

There is a notable absence of the lethargic movements which one is accustomed to see on all kinds of building work. Everybody appears to be working with a will, as though the job had to be carried through with the utmost possible speed. On one scheme, where 236 men were employed, I took particular care to inspect places where, in normal conditions, workmen might be found "miking," e.g., behind stacks of bricks, timber stores, sheds,

etc. In no case did I discover anything of the sort. I watched a group of labourers shovelling earth into carts. It was wonderful how quickly the carts were filled. This intense activity was not due to the intimidation of a vigilant foreman. The men were on their honour. As a workman put it: "It is a question of honour with the men, they want to do their best; and they have every incentive to do so: it is in their own interest that they should." Another man remarked, "You won't find any 'swinging' on this job. The work goes on just the same whether the foreman is about or not." I corroborated this for myself. In the joinery shop all the men were working at top speed. I discovered that the shop foreman was "away queer." A labourer engaged on digging trenches said: "Things are very fair on this job. You don't get 'hunched' about." Another said: "We don't want no 'dogging' on this job. Where's the need? We shouldn't have volunteered if we didn't mean to do our best." On one scheme I discovered a variation of what I had come to regard as the Guild standard of work. I noticed in my wanderings over the site that there appeared to be a "sagging" in the speed worked by some of the labourers. Among a group employed on excavation work, only a few seemed to be working with a will. The others appeared to find a philosophical joy in contemplation rather than activity. I overheard one of the hard workers exclaim: "Come on, mates, you're letting us down!" This remark had the desired effect. The general foreman explained that, as there were large numbers of unemployed in the neighbourhood, many had volunteered merely for a job, and not because they had been inspired by Guild ideals. Besides, it would take time for their minds and muscles to respond to the new stimuli. His experience was that, after a few weeks, two or three keen guildsmen produced wonderful effects on a whole gang.

### INCREASED OUTPUT.

Work carried on in such a spirit should result in increased output, and I found expert opinion unanimous on this point. Much controversy has arisen over the number of bricks bricklayers are supposed to be able to lay in a day. It is obvious that the nature of the work determines, other things being equal, the speed at which bricks can be laid. For instance, a man engaged on building a "straight" wall would lay more bricks than a man building flues or chimney breasts. A bricklayer remarked that in "cottage weaving" there were a number of corners to be negotiated, and the only fair way of determining averages was to wait until the cottages were completed. On the question of output generally, I was careful to interview the people best able to decide, viz., clerks of the works. Some were more guarded in their replies than others, but all were pleased with output. Some went so far as to say that outputs on Guild schemes were 25 per cent. above the average for similar kinds of work by other contractors.

Notwithstanding the increased speed the Guilds are putting forth, none of the work is scamped. The quality of Guild work is of a very high standard. The Surveyor to the Bently-with-Arksey Urban District Council stated in writing: "The quality of the work is extra good and far superior to that done by any other contractors in the district." A high official of the Ministry of Health declared that the work of the guildsmen at the Clayton Estate was "the best in England and Wales." The Chairman of the Contracts Subcommittee of the Manchester City Corporation said, "Work on Guild contracts beats everything." The brickwork on the Clayton Estate is the finest I have ever seen. I heard complaints concerning this scheme; production was excellent, but quality was too good! The Guild, of course, could reduce costs even lower by putting in inferior work. But no Guild craftsman would willingly consent to scamp his work. One of the most hopeful signs of the Guild movement is the revival of the craft spirit. "We shall do work worthy of the Middle Ages," exclaimed one of the Manchester operatives. Every guildsman I talked to appeared proud of the work the Guild was doing. A London operative said: "We want the people to point to those houses, and say, 'Those fine places were built by the Guild.'"

A wood worker of 35 years' experience said it was a real pleasure to work for the Guild. Life was worth living because his craft was "honoured and not debased." In the joinery shop the men took pleasure in pointing out the excellence of the work, and how it differed from ordinary jerry building. At Walthamstow, where the men had insisted on doing *all* the joinery work on the site, I examined the cottage dressers. The drawers were made to fit, and were dove-tailed not only in front, but at the back. On another scheme a carpenter was at work on the frame of a mansard roof. It is usual to mortice and tenon only the main posts, and to "cut in" the intermediaries. On this job all were morticed and tenoned. "We are craftsmen," said another, "and the first thing with us is our craft. We like doing our work well. There's no pleasure in scamping. Any man who is a craftsman will tell you that."

#### PAYMENT FOR LOST TIME.

Guilds reserve the right to pay guildsmen full wages in wet weather or fine, in sickness or on holiday. Continuous pay, it is claimed, does not increase the cost of production, but actually reduces it, because the workers "pull their weight" under this system. This is corroborated by the resident architect on the Walthamstow housing schemes, who said: "I have never seen a contractor who was able to get his men to work so well." Cynics have stated that this provision for continuous pay will tend to encourage operatives working for the Guild to make their job a convalescent home. This prophecy has not, as far as I could gather, been fulfilled. The pay sheet of the Manchester Guild for the quarter ended

December 30th, 1920, showed that the amount of money paid out in respect of time not worked was less than 1 per cent. of the total wages paid, notwithstanding the fact that during the quarter under review a considerable amount of bad weather was experienced.

At Walkden, where an average of forty men had been employed for twenty-three weeks, the amount paid in respect of time lost through wet weather averaged 17s. 6d. a week over the whole period. The fact is, that under the Guild system there is less "raining off" than on the other jobs. The Chairman of the Worseley District Council Housing Committee informed me that the men on the Walkden scheme had worked during all sorts of bad weather. One man, who had been on the job for twenty-three weeks, had only "rained off" three hours. The Chairman of the Housing Committee said: "The men worked many a time in bad weather when I would not have worked in it." It should be stated, however, that under the Guild system men are willing to be put to any job that can be found when weather conditions make it impossible for them to carry on their own craft.

I came across much evidence to show that guildsmen generally are very anxious not to "lean on the pool." Of course, there are exceptions. In Manchester I had my attention drawn to an instance of two men who "went sick" and drew their pay just the same as though they had been at work. Their "sickness" did not prevent their being discovered in a public-house! This instance was reported and the men were dismissed, and their dismissal met with the approval of the Works Committee.

#### COSTS OF BUILDING.

As to the claim that the Guilds can build cheaper than ordinary contractors, there are grounds for thinking that when the figures of actual cost have been ascertained, the claim will be supported by facts. Judgment on this point, however, must be suspended. With the exception of two non-parlour houses (part of a contract for seventy-seven houses) built by Guild labour for the Bentley-with-Arksey Urban District Council, no houses have been completed under Guild contracts. This contract was undertaken in November, 1920, and in less than four months the first two houses were ready for occupation. The summary of cost, certified by the Council's surveyor, was as follows:—

	£	s.	d.
Bricklayers' materials	238	14	7
Tilers' materials	96	1	8
Plasterers' materials	41	17	9
Plumbers' materials	109	0	6
Painters' materials	2	3	8
Carpenters' and Joiners' materials	203	14	1
Ironmongery	58	14	1
Electrician	40	8	0
Water charges	2	0	0
Carriage (railway)	9	12	0
Carting	17	18	0
Wages	457	6	6

£1,367 10 10



Brought forward ... ..	1,367	10	10
5 per cent. establishment charges ...	68	7	1
Allowance for continuous pay ...	80	0	0
Insurance ... ..	4	0	0
	<u>£1,519</u>	<u>17</u>	<u>11</u>

These figures show a considerable reduction on the original estimate sent in by the Guild, and a saving on the private builders' prices of at least £200 a house. With regard to all other Guild contracts, there is no statistical evidence of lower costs apart from the actual estimates submitted in competition with other contractors; but in the schemes visited, all the evidence, apart from actual figures, indicated that the final costs would be considerably below contract figures.

An analysis of the estimates sent in by the seven competitors for the Walthamstow Council Scheme for 400 workmen's dwellings shows that the accepted estimate of the London Guild was more than £14,000 below the lowest estimate submitted by the private contractors, or an average saving of, approximately, £36 per house.

At Walkden a contract was secured by the Bolton Building Guild. There were four competitors for the first sixty-four houses. The difference between the highest tender and the Guild estimate was £12,244, or £191 a house. The Guild estimate was £5,626 (or £87 18s. a house) less than the lowest tender submitted by a building contractor. Even the Guild estimate was regarded as too high by the Ministry of Health. In conjunction with the Ministry the estimates were revised, and on the revised figures the Guild secured a contract for 138 houses. The contract figures (gross) were as follows:

A type, £923; B type, £960; B<sub>4</sub> type, £981.

The Manchester City Corporation has entered into contracts for the building of 2,500 houses. At Clayton and Weaste, the Guild has secured contracts for 100 and 184 houses respectively. It was not possible to obtain figures as to the estimates submitted by private contractors, nor was it possible to obtain actual figures as to the cost of houses which private contractors had completed. Tenders were submitted for particular types of houses, regardless of location of housing schemes within the City. The following estimates apply to both contracts which the Manchester Guild has obtained. It should be noted that these estimates were sent in at the end of October when building costs were at their highest. The figures are as follows:—

Type A3, drawing 6 ... ..	£824
" B3 " 4 ... ..	£1,038
" B3 " 12 ... ..	£1,054
" B4 " 3 ... ..	£1,060

Guild officials are confident that the final costs will be considerably below this, and this view is supported by officials of the Manchester City Corporation. A number of houses were nearing completion on the Clayton scheme, and it is expected that figures as to actual cost will be available in the early summer. Allowing for the difficulties of exact comparison, even of similar types of houses,

it will be possible, when private contractors' accounts have been settled, to decide whether the Guilds can in fact build cheaper than the ordinary contractor.

At present, only thirteen Guild contracts have been sanctioned—two for London and eleven in the country. They are in operation at the following places: Altrincham, Bedwell, Brierfield, Clayton, Greenwich, Kendal, Ross, Rotherham, Tredegar, Walkden, Walthamstow, and Weaste.

As an example of the efforts which the Building Guilds are making to impress upon their members the nature of their movement, we print here a copy of a poster exhibited in the workshops:—

#### BOLTON BUILDING GUILD.

Office: 17 WOOD STREET, BOLTON.

Fellow Guildsmen,

Remember we are being watched by the whole community. We and our movement are on our mettle, we are on our trial. If we do our bit, conscious of these facts, we shall win through. If we appreciate the attempt to improve conditions of labour, and the system of continuous pay, it behoves each workman on this contract, from the highest to the lowest, to do his level best to prevent waste of any kind of materials or time, and to take every care of tools and plant owned by the Guild.

Just as sure as the success of our movement stands for the passing of the old idea of "*laissez-faire*," so sure does the success depend on each and all working for the Guild.

It is essential that the highest discipline must be maintained. Insubordination cannot be allowed for a moment. Those placed in charge must be obeyed. On the other hand suggestions or ideas for the more efficient carrying out of any part of the contract are to be encouraged. These to be given to the departmental foreman concerned.

All grievances should be given to the Secretary in writing and signed, when they will be investigated by the Committee.

FINALLY let each workman work side by side in good fellowship, free from envy, selfishness and conceit. Scamp nothing, shirk no job, pleasant or otherwise, but each do his best—leave the rest to the righteousness of our cause, and those who have made it their duty to interest themselves in our movement, and

SUCCESS WILL SURELY COME.

*Yours fraternally,*

THE GUILD COMMITTEE.

In summing up, it is important to remember that the Guilds are of quite recent growth, and the extent of their operations is comparatively small. It is necessary also to bear in mind that a new organisation tends to attract the keener men. As to whether the pace and quality so far obtained by the Guilds will be maintained, time alone will show. The present situation, however, may be summed up as follows:—

1. The Guilds have proved that they are organised on business-like lines and are able to carry out building operations in a workmanlike manner.

2. The quality of the work produced is distinctly above the average.

3. The weight of evidence goes to show that the output per man on Guild contracts is as good as that obtained by the best private contractors, and certainly higher than most.

4. It is not yet possible to make any definite statement as to comparative building costs, but, from the evidence obtained, there is ground for believing that the cost of building on Guild contracts is likely to be lower than the average costs in the districts where the Guilds are not operating.

(Concluded.)

# 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.]  
Acting Editor: ARTHUR SEED.

With the opening of Parliament on September 22nd, and the immediate introduction of the Forests Bill the following day, the issue of the Bulletin by the Department of Industries and Commerce on "Sawmillers' Costs and Prices" on the 3rd October and the probable early introduction of the Tariff Bill, there is much of vital importance to the milling industry taking place at the present time, and it behoves all those interested in the industry to see that their interests are properly safeguarded.

\* \* \*

The Forests Bill was ably dealt with in a leader in the *Dominion* of September 24th, and the Bill itself has been widely published in the newspapers throughout New Zealand, but does not appear to have received much comment or criticism so far. We agree with the *Dominion* in hoping that the introduction of the Bill marks a definite break with the bad past in which the forest wealth of the Dominion was improvidently wasted, and must certainly support the plea of that paper that some provision should be made in the measure for providing for definite and adequate inspection and demarcation by the officers of the Forest Service, who are properly trained for that purpose, of all forest lands which remain in New Zealand, whether already under the jurisdiction of the Forest Service or not, before such are thrown open for settlement. In fact, when it is proposed that any lands containing bush shall be opened up for settlement we consider that provision should be made for the State Forest Service to make thorough inspection of such bush and be in a position to say that such and such areas must *not* be alienated, but must either first be offered for milling purposes or else permanently reserved for continuous production of forest products.

The main details of the Bill are largely of technical character, but in the personnel of the proposed Advisory Board better provision should be made for representation of the sawmilling industry, for the conditions of sawmilling in the North Island vary so greatly from the conditions in the South that at least one representative from each Island should be included.

\* \* \*

We continue to receive from Mr. W. T. Irvine from Sydney newspaper clippings regarding the timber industry and tariff question in Australia, and it would appear that the effect of the new Australian tariff on the timber trade there is likely to have the effect of closing that market to those lower grades of New Zealand timbers, the whole of which it is quite impossible for the home market to absorb. The whole effect of the new tariff upon our timber industry, intercolonial shipping

and freights cannot yet be judged, but there is clear indication that it is essential for some form of reciprocity to be arranged between the two countries, for otherwise not only the timber but all trade with Australia will suffer a considerable diminution. The latest news of Mr. Irvine was that he was still feeling very unwell.

\* \* \*

The Bulletin on "Sawmillers' Costs and Prices" recently issued by the Board of Trade appears to have received fairly wide publicity in the daily newspapers but so far has received very little comment or criticism, and this appears to be an indication that the position regarding the timber trade from the sawmillers' point of view has been put so clearly before the public by the Bulletin that it offers very little grounds for criticism. It makes one point very clear, and that is that there is very little prospect of any reduction in timber prices, and this should to a large extent restore confidence in building activities, and show those who are at present holding back from building in the hope of a fall in prices that no good cause is to be served by such waiting.

\* \* \*

Ranger Crowley, of the State Forest Department, whose headquarters are now at Palmerston North instead of Wellington, is busy on a special job in the silver pine State forest west of Tongariro, selecting and marking out a sawmill area for the Prisons Department.

\* \* \*

We have to acknowledge receipt from the State Forest Service of copy of last month's issue of their monthly Newsletter, "Te Karere o Tane." Much of the contents are of interest to those engaged in the timber industry, but space only allows us to quote the following paragraph:—

"The head office, Wellington, of the State Forest Service had the pleasure of a visit from Mr. Van Dusen recently. Mr. Van Dusen is an officer of the British Columbia Forest Branch, and is on a tour through Australasia on behalf of one of the big Canadian timber concerns. He expressed himself as very gratified to hear of the progress made in forestry matters in New Zealand, and was particularly glad to see that the Minister had adopted a progressive timber-sale policy. He strongly urged the dedication of all Crown forests as provisional State forests, as in his experience unity of control is an absolute necessity. Interest in the timber trade is looking much brighter, and he considers that the Australian market is showing marked improvement, that Oregon prices have reached bottom, and that an improvement in that line also may now be looked for. Oregon is at present quoted at about 17s. 6d. landed in New Zealand."

## A Visit to Port Craig.

The Marlborough Timber Company's big new mill at Port Craig, Mussel Beach, Southland, was officially opened last month, and through the courtesy of the State Forest Service (the Director and Special Timber Officer of which were present at the opening), we have been given a description of the mill and workings, and of the journey to Port Craig:—

On arrival at Tuatapere, the most south-western terminus of the Government railway, the party were conveyed by motor-car for seven miles down the fertile valley of the Waiau to the ocean beach. On either side prosperous looking farms were to be seen, with a sawmill here and there producing rimu, matai and totara.

This being the end of the metalled road, motors were abandoned for the modest horse vehicles in the shape of spring drays, which travelled along the open ocean beach for some 14 miles, to a point marked on the map as Track Burn. This stage of the journey was so rough that it had to be negotiated on foot except for portions where the beach was flat and hard and the passengers could ride in any sort of comfort on the 8in. board which constituted the seat. At Track Burn the Marlborough Timber Company had erected a cantilever landing stage, and it was a rather nervy party that watched the dingy push off from the oil launch, which was anchored in the offing, and take aboard the luggage, which was lowered into it by ropes and tackle. This operation took some time, as there was a fair sea running, and when the time came for passengers to get aboard a gangway was lowered. Considerable agility had to be displayed to get from the end of the suspended gangway to the boat, as it rose and fell in the surf. At last all were aboard the launch which, it may be mentioned here, was the craft that brought back the escaped fugitive Von Lucknow to Auckland, and is now the property of the Marlborough Timber Company.

Seven miles by open sea and then the landing at the Port Craig wharf, where a sloping skidway is provided for the sea to land the flat-bottomed dingy: another exciting performance.

Arriving at 5 p.m. after a very hard and tiring day—having left Tuatapere at 6 a.m.—we were ushered to the residence of the Manager, Mr. Peter Daley, to partake of a very welcome meal, having been without food for just on 12 hours; needless to say justice was done.

Next day the object of our visit, the new American outfit sawmill was inspected. The bush hauling outfit, a Lidgerwood Skyline hauler and yarder, was working, and it was demonstrated that a much greater speed of travel can be gained by this method than by the ground snigging method. The bush being worked at present, and for at least five miles along the proposed main line towards Sand Hill Point, is of a very sparse and wizened

nature. The country is very rough and rugged, being very close to the sea coast, and rock cuttings have to be blasted out to make a tramway route possible. The logs are loaded on bogie trucks of the ordinary bush character by the Lidgerwood yarder, which is a composite part of the machine.

The logs are grappled by hooks at both ends, and hoisted bodily in the air, and landed in proper position for transport on the trucks to the mill skids. A geared locomotive of local manufacture then hauls the loads along a very well laid steel tramway with 56lb. rails, about 40 chains long at present, to be dumped on sloping skids which lead to the fiddling bench.

The first operation of fiddling (cross-cutting) the logs to the required length is performed by a steam-driven crank crosscut saw of large dimensions. This saw makes short work of the job, and then the live rolls are set in motion and the severed log moves into line with the Pacific breakdown. When its turn comes a steam nigger rises up from below, and with mighty power thrusts the log upward and forward on to the bench brackets. In the hands of the skilful sawyer imported from America to teach the natives, the steam nigger is almost human in the manner it can, gently or roughly as the operator wishes, handle the log.

Once on the Pacific a dogger-on who rides on the carriage works levers which firmly but quietly force in the holding dogs, and the setter, riding too, adjusts the position, having regard for taper, shake, etc., and before the adjustment is completed the sawyer who manipulates the travelling levers takes a slab off in half the usual time, and the log is back again to be kicked over by the nigger until the whole operation of flitching is completed—each slab or flitch falls from the saw and is conveyed by live rolls forward, and by conveyor chains sideways, to the next bench. What is called a Pony Pacific takes the place of the local breast bench. This bench is of the same construction as the Breaker Down Pacific, but is travelled by what is termed a steam shot-gun feed.

The shot-gun feed is composed of a long steam cylinder, the length of the travel required, containing a piston and rod, one end of the rod being fastened to the bench. Steam pressure is introduced at either end of the cylinder at will by the movement of a lever by the sawyer and a very sensitive and fast feed is the result. Another bench which is comparatively uncommon in this country is the edger, which deals mostly with flitches and boards with bark on both edges. The edger is a feed roller machine having four or more saws on a slotted spindle. These saws can be set to any distance apart in a moment, by the movement of a lever in conjunction with pointers on a scale graduated in inches and parts of an inch. So far the scheme of operation is characteristically American, except that circular saws are used instead of band saws.

When the sawn timber leaves the pony pacific and edger it is conveyed by live rolls and chains to the docking bench where the operator mechanically causes goose or cut off saws to rise from below and cut clean square-ends, which is a great improvement on the old method of allowing slugs and broken ends to disfigure the stacked timber.

After being docked to required length the timber moves on to a long sloping chain-way which lowers it down to the stacking and tallying yard on the wharf. It may here be said that from the time the log falls in the bush to the time the timber reaches the tallying yard, the whole of the handling is mechanical, very little human exertion being necessary except an occasional movement of levers or adjustments.

All small slabs, strips and other waste are fed into a hogger which chews everything which comes into its maw into small chips. These chips along with all sawdust are mechanically conveyed straight into the Dutch ovens, which fire the pair of large 18ft. x 5ft. boilers generating steam at 135lb. pressure. Large slabs and dockings are chain-conveyed to a dump where the surplus will be burnt from time to time.

The engine is a large compact double cylinder of high press character, and transmits its power through the various pulleys by means of what is a new departure in this country—viz., endless leather belts of extraordinarily wide dimensions which are tensioned by the jockey pulley method.

The saw filing room is well equipped with emery gulleters, swages, anvils, etc., and a Covell's automatic saw sharpener completes the outfit.

The whole mill is well housed with corrugated iron roof, and is of the double decker American type. The situation on the hillside within a few chains of the ocean rendered its construction fairly easy by excavation.

The scheme of things has been well thought out, and the result is probably the most up-to-date plant in this Dominion. The main difficulty will not be the sawing: it will be the maintenance of a plentiful log supply of 40,000ft. per day from rough bush country, to keep such a sawmill going to its full capacity.

A day was taken to make a trip to the point about a mile past Sand Hill point. The track—some five miles long—was wet and muddy, and traversed all the way through rough granite, wind-swept, and rather sparse timber country. For these five miles at any rate, the main line must keep close to the sea, following round the spurs and gulleys, which are many—a decidedly rough and costly proposition. We wish the company every success in their enterprise and pluck in launching out in quite a new phase of the milling industry: they are pioneers just in as large a sense as the first sawmillers who started saws in New Zealand.

## Universal Classification.

A further step towards the end of securing a universal classification of timber for the whole of New Zealand was taken when this matter came up for discussion at the recent meeting of the Executive of the Sawmillers' Federation. The whole question was thoroughly gone into with representatives of the State Forest Service and the Department of Industries, and a form of classification suitable to all districts was practically decided upon, and it is hoped that this will be adopted in the near future.

## The Late Sir David Hutchens.

A tribute was paid to the memory of the late Sir David Hutchens on September 14th last when a representative gathering of those interested in forestry and the timber industry took place at the Karori Cemetery to witness the ceremony of planting a young kauri tree upon the grave of the late Sir David Hutchens. The ceremony was performed by Sir James Wilson, President of the New Zealand Forestry League, and in a suitable speech he outlined the valuable work performed by the deceased gentleman, and its great importance to the future of New Zealand. Sir Francis Bell also made fitting tribute.

## Urewera Lands.

Recently the Taumarunui papers and the Settlers' Association of that district made strong representations to the Government to have the "reservation" over a certain large area of provisional State forest in that locality lifted, and we are pleased to note that after full investigation the Minister has decided that the "reservation" must stand. In pleasingly marked contrast to the attitude adopted in this instance by the local newspaper is the stand taken by the *Poverty Bay Herald*, *Whakatane Press*, *East Coast Guardian*, and many other papers on the question of the Urewera Lands, for articles have recently appeared in these papers along the lines of the plea appearing in our last issue for proper demarcation of the forest areas of this territory to be undertaken before the lands are opened up for settlement.

## Beech Forest Asset.

The report of Dr. L. Cockayne's lecture on the beech forests of New Zealand, in a recent issue, and that of the discussion on the lecture, which appeared later, are commended to attention. Dr. Cockayne presented clearly and interestingly many facts about the general character of New Zealand's forests, and made out a clear case for a definite policy for dealing with the extensive beech forests

in particular. Notwithstanding the plentiful supply of beech, it is as yet little known as a marketed timber, though it has many good qualities. The lecturer mentioned its excellent behaviour from the forester's point of view, and drove home its tolerance of poor soil. It is, perhaps, the fact that a beech is a poor-soil denizen that has helped to keep it in the background commercially, for New Zealand forestry in the past has been too much mere deforestation.

Dr. Cockayne is to be congratulated upon his interesting collection of evidence which *prima facie* points to extensive crossing between the recognised species of beech. He suggests that hybrid beeches probably differ in timber qualities from the pure strains, and evidently the question needs inquiry. If there are differences, and timbers can be varied and improved by hybridisation, it should not be necessary to wait upon the chances of nature. Timber trees cannot be raised as quickly as flowering plants for the garden, but that should not hinder some new Burbank from laying the foundations of a later New Forest, where future generations may mill woods yet unknown to industry.—*Evening Post*.

The following clipping from the *Sydney Morning Herald* was sent to us by Mr. Irvine, and it will be of interest to sawmillers in New Zealand as showing the state of the industry in Australia early in September:—

#### UNEMPLOYMENT.

##### SAWMILLS CLOSING DOWN.

##### LABOUR MEMBER'S ADVICE.

HOBART, Thursday.

A deputation of Labour members of Parliament waited on the Minister for Works, Mr. J. B. Hayes, recently with reference to the unemployment problem, which various speakers showed was most acute. It was stated that 800 timber workers had been discharged owing to big importations of timber, and that private employers all over the State were dismissing men wholesale.

Mr. Ogden, one of the Labour members, said that the worst had not been reached, and suggested that demands for higher wages should be held in abeyance when they caused unemployment. All the timber mills at Geeveston were being closed down, and yet timber workers were asking £12 weekly. Such demands might be the cause of the mills shutting down, and if such demands were frightening private industry the unions ought to make sacrifices in order to keep the industries going.

The Minister, in reply, said he had foreseen the difficulty, and was providing Government work wherever possible. Arbitration Court awards had

been made without any regard to whether the industry could pay the increased wages. One Judge had said that if an industry could not pay it must cease, but that was a silly statement. It was an industry, not the employer, which paid wages, and each industry must beat competition, and workers must make sacrifices to do that.

BATEMAN'S BAY, Thursday.

Owing to the decreased demand for timber, almost all the sawmills in the district have closed down indefinitely. All hands employed in the mills, and in the hewing and hauling of timber in the forests, have been paid off. Over 500 men are directly affected, while in addition a large number of storekeepers and others, who are dependent upon the prosperity of the sawmills for their livelihood, are faced with a serious outlook. Out of a total number of 16 mills, only three are still working, and it is expected that these will also close down soon.

#### PLEA FOR COMMON-SENSE.

Mr. A. D. Kay, addressing a large meeting in Martin Place, said that unemployment was largely caused by the policy of strikes, direct action, and go slow, which had been advocated for some years by those who had claimed to be leaders of the working class. The workers had been told that by doing as little as possible, and demanding reward beyond merit and reason, they would realise an industrial Utopia, and emancipate themselves from wage slavery. Government doles only aggravated the position and prolonged the agony. The only remedy was the re-casting of industry on common-sense lines.—9/9/21.

#### "Stockholm Tar"

FROM KAURI LIMBS.

Forest-Ranger Whitehorn, of the Auckland Conservation Region, reports that a settler named Arnusson, living near Dargaville, has been extracting material from kauri limbs, which he sells in Auckland as Stockholm tar. Messrs. John Burns and Co., to whom he sold forty gallons, had no difficulty in disposing of this. They state that it is a considerably better article than the usual "imitation" Stockholm tar of commerce; it is somewhat thinner than the European tar. Arnusson's method of extraction is interesting, being that adopted by the Swedish peasants in the treatment of their pines. The wood is split up into small pieces and stacked in a circular heap, with ends pointing inwards and downwards. This is then fired on the outside, as in charcoal-burning, the heat causing the juices to run down the centre of the pile into a receptacle placed at the bottom. This promises well for the utilisation of our kauri bush waste (states the "Forest Service Newsletter.")—*N.Z. Times*.

## N.Z.I.A. Competitions.

### WELLINGTON BRANCH.

STUDENTS' COMPETITION NO. 3 (limited to Students attached to the Wellington Branch only).

Two book prizes, first value £3 3s., second value £1 1s., will be awarded to the successful competitors in the following competition :—

**SUBJECT.**—A drawing of any one of the orders to be taken from some well-known Grecian or Roman example. Showing the order complete, detail to a larger scale and drawing of the building in which the selected example has been used and some accessories of the period. The whole to be arranged as a competition on one sheet.

**DRAWING.**—The drawing to be on one sheet of Imperial size Whatman's paper, mounted on strawboard, and to be fully rendered in any desired medium. Marks will be given for composition, rendering and refined lettering.

**TIME.**—Drawings to be sent in addressed to the District Secretary, Wellington Branch N.Z.I.A., 7 Woodward Street, Wellington, under a nom de plume, accompanied by a sealed envelope marked with nom de plume and containing competitor's name and address. Date of sending in : November 30th, 1921.

STUDENTS' COMPETITION NO. 4 (limited to Students attached to the Wellington Branch only).

Two book prizes, first value £3 3s., second value £1 1s., will be awarded to the successful competitors in the following competition :—

**SUBJECT.**—A shaded drawing from Architectural Cast. The Carrara Ceiling Co., of Riddiford Street, Wellington, have very kindly consented to lend a cast for this subject and allow students to attend at their factory during working hours to make their drawings.

**DRAWING.**—The drawing to be on one sheet of Imperial size Whatman's, mounted on strawboard, and may be finished in any desired medium.

**TIME.**—Drawings to be sent in addressed to the District Secretary, Wellington Branch, N.Z.I.A., 7 Woodward Street, Wellington, under a nom de plume, accompanied by a sealed envelope marked with nom de plume on outside and containing competitor's name and address. Date of sending in : December 20th, 1921.

## Our 80th Competition.

We offer a prize of £1 1s. for the best design submitted for

### THE END OF A DRAWING ROOM.

The room to be 26ft. long by 16ft. wide with a fireplace at one end in centre. The room is to be panelled to height of doors, viz., 7ft., and the ceiling to be 10ft. high.

A design for the fireplace end is required. The chimney breast to be 6ft. wide, projecting 12in. into room. All the woodwork in room is to be painted. It is proposed that the work be well carried out and good material used.

**DRAWINGS REQUIRED.**—¼in. scale elevation, plan, and vertical sections with quarter full size details of wall panelling and chimney piece, etc. Drawings must show the treatment of fireplace opening, grate, etc. Drawings to be inked in with the sections hatched in black.

Mr. Wm. M. Page, of Wellington, has kindly set this subject.

Designs must be sent in finished as above under a nom de plume, addressed to the Editor "N.Z. Building Progress," 22 Wingfield Street, Wellington, and clearly marked, "Eightieth" Competition on outside, with a covering letter giving competitor's name, and address of employer. Designs must be sent in by November 27th, 1921.

## Book Reviews.

SHADES AND SHADOWS, by David C. Lange. (John Wiley and Sons, New York; Chapman and Hall, Ltd., London. 15s. net.)

In this book the author demonstrates how to cast shades and shadows correctly of any architectural object. The book is intended as a text-book on the subject. Many architectural students receive their early training under engineering teachers, and such students would find the study of Mr. Lange's book a most valuable aid to the development of appreciation of the artistic architectural point of view. The first chapter deals with the elementary principles of Descriptive Geometry and the second chapter with Principles of Shades and Shadows, which is an application of Descriptive Geometry, with the object of giving a more realistic appearance to the representation of objects. It is astonishing how few students, even after finishing the usual course of study, are able to determine accurately the shades and shadows in architectural drawings. The book is full of drawings and illustrations to demonstrate the author's points.

## Auckland War Memorial Museum Competition.

The matter of the competitive designs which have been invited for the Auckland War Memorial Museum was under consideration recently (says the *Herald*) by the joint committee comprising the Council of the Auckland Institute and the Citizens' War Memorial Committee. Subsequently a statement was made by the Mayor, Mr. J. H. Gunson, who presided at the meeting in his capacity as President of the Institute.

The terms and conditions of the competition, said Mr. Gunson, had been the subject of considerable correspondence between the Institute of Architects and the joint committee. It was definitely arranged that those terms and conditions shall stand, with the following interpretations of the clauses mentioned :—

Clause 5 (providing for the judging of the competitive designs to be carried out by the Council and Committee jointly, with the assistance of architects other than competitors, to be called in in an advisory capacity): The designs will be judged by a jury of five, two to be appointed by the Institute of Architects, and three by the joint committee of the Council and Committee. Clause 7 (covering payment of architects' fees in connection with the construction of the building): The terms and conditions as to payment for the services of the architects employed are to be those laid down in the scale of charges of the N.Z.I.A., namely, 6½ per cent. on the total cost of the work. Clause 14 (fixing the date for the designs to be submitted as February 28th): The date is extended to May 30th, 1922.

Mr. Gunson said that the architects and all concerned were now fully co-operating to make the movement a pronounced success. He mentioned that the final appeal to the public for funds would be made next year.

## Building Notes.

### AUCKLAND.

Messrs. Grierson and Aimer invite tenders (closing on October 20th) for Children's Home isolation block at Manuera.

Mr. Daniel B. Patterson invites tenders (closing October 13th) for a store at Freeman's Bay.

Mr. A. Sinclair O'Connor invited tenders last month for worker's dwelling at Mangere.

Mr. L. S. Piper invites tenders for a residence at Cheltenham.

The question of permitting the erection of dwelling houses on sections with a smaller frontage than 50ft. came before the One Tree Hill Road Board recently. The case in point was that of a returned soldier, who had purchased, through the Government, a section 46ft. 2in., and who asked the Board's permission to allow him to build thereon. On the motion of the chairman, Mr. R. G. Clark, it was decided that the applicant be informed that the Board could not see its way to depart from its by-laws, and therefore the request would be refused.

The new building scheme in connection with St. John's College, the theological school of the Church of England, situated near the junction of St. Helier's Bay and Panmure Roads, is being rapidly carried out, and it is expected that the new main building will be ready for occupation next March. The warden's residence, a fine two-storeyed building of modern design, adjacent to the main building, has been completed, and is in occupation by the warden, Canon P. T. Williams. Work on the exterior and the two upper floors of the main structure has also been completed, and the workmen are now confining their main energies to the ground floor. The building is of three storeys, brick and grey slate tiles.

Building has been proceeding briskly in the Borough of Devonport during recent months. For the six months ended September 30th, permits for the erection of 44

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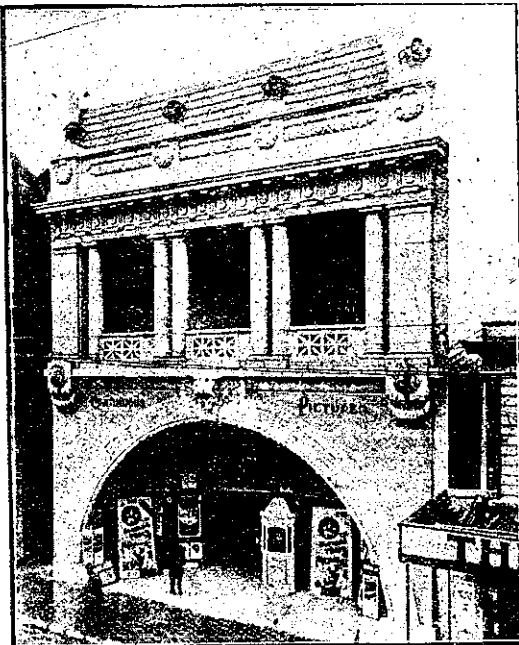
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DRAIN PIPES.

dwellings, of a total cost of £35,946, were issued, in addition to permits for 47 alterations or additions to houses, costing £8,058. This rate of building is exceptional for Devonport.

During August permits were issued for a total of 32 houses, at a cost of £27,815, one shop and dwelling in brick, £1,200, one brick stable £150, and 15 permits for sundries and alterations totalling £372, the gross total for the month being £29,537. The total permits issued for new dwellings at Mt. Albert from April 1st to date was 119, aggregating £105,792.

#### PERSONAL.

Two Auckland architectural students have lately successfully passed the special war examination, under the auspices of the Royal Institute of British Architects. They are Mr. H. Anthony Mealand and Mr. C. R. Towle.

#### CHRISTCHURCH.

The Public Works Tenders Board invite tenders, closing November 8th, for the erection of 61 cottages at Otira in wood or concrete. Tenders for concrete construction must include full specification of concrete work. Plants, etc., may be seen at Public Works Offices, Auckland, Christchurch, Dunedin and Greymouth.

The Housing Superintendent, Wellington, is calling for tenders for the erection of twenty-two workers' dwellings (16 at Linwood and six at Woolston).

Mr. H. St. A. Murray invites tenders (closing October 19th) for the erection of a War Memorial at Leeston.

Messrs. J. S. and M. J. Guthrie invited tenders early this month for the erection of a residence at St. Albans.

Messrs. Ellis and Hall invite tenders, closing on the 28th, for a vicarage in brick at Papanui for St. Paul's Church.

The Hospital Board have a list of urgent buildings required. At a recent meeting the Committee's report stated inter alia that it had given very full consideration to the question of proceeding with the erection of essential buildings and recommended that the Board take steps to obtain the consent of the Minister to the following works being put in hand at an early date:—Christchurch Hospital—Nurses' Home Extension, £45,000; Infectious Diseases' Hospital—new pavilion to contain 64 beds, £8,000; Extension to Nurses' Home, etc., £2,000; Open Air Home for Children, irrespective of the amount in hand, £9,000; amount unprovided for, required for the establishment of the X-Ray at the Sanatorium, £100. Total, £64,100. For the above purposes the Board was asked to authorise the raising of the money by loan up to £65,100. Besides the above, the other works which the Board was recommended to proceed with—and for which money had already been provided on the estimates, were: X-Ray room at the Sanatorium, £600; accommodation for delirious patients, Christchurch Hospital, £1,000; Pathological Laboratory extension, £1,065. Total, £2,665.

In addition to the Housing Superintendent's 22 houses for which tenders are being called, the City Council intend raising a further loan for £5,000, and the Woolston Borough Council propose to do the same for housing in Christchurch. It seems the City Council have already had estimates for machine-made concrete block-houses, five rooms, with all conveniences, for £630, reducible to £530 each for a dozen houses or more built by day labour. Allowing £90 for the section, the total cost would be £620, and at that price, with money at 4½ per cent., the occupiers of those homes could purchase them at 13s. 9d. per week, including principal, interest and insurance.

The Christchurch Drainage Board proposes a loan of £750,000 for improvements and extensions to the city and suburban drainage systems.

#### WHANGAREI.

The sum of £1,284 has been subscribed for the Whangarei War Memorial, the objective being £2,000. The memorial is to be erected in the triangle near the railway station, the committee having now decided in favour of Aberdeen granite. Competitive designs have been considered, but no definite choice has been made yet.

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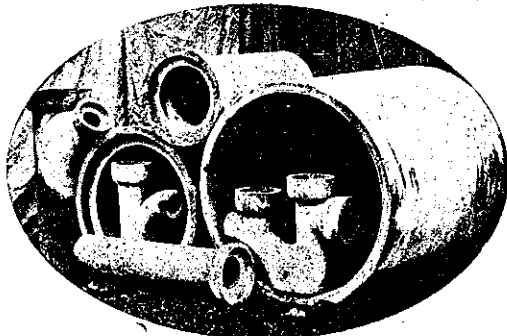
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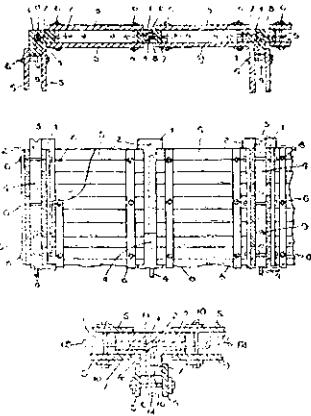
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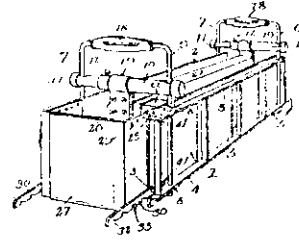
**CONCRETE BUILDING CONSTRUCTION.**—A patent, No. 45,083, has been taken out by G. A. Hayter, of Hamilton, which consists in utilising members precast in concrete, together with temporary shutters or boxing to provide the necessary moulds for forming solid walls and partitions.



The precast members which are left permanently in the walls and partitions are used at corners, intersections, and intermediately to act as spreaders for the shutters and serve to stiffen the construction until the concrete sets. The precast members are formed in sections, and special means are provided for connecting same together and also to the concrete filled between the shutters.

**CONCRETE-MOULD.**—A patent, No. 45,140, has been taken out by A. S. Greene, of U.S.A., which comprises side walls, means for holding said side walls in spaced rela-

tion, an end gate comprising a pair of members having overlapping end portions and rearwardly extending flanges pivotally connected at their upper corners with the upper



corners of said side wall, and a latch for temporarily holding the lower portion of said gate in position.

**CONCRETE BUILDING BLOCK.**—A patent, No. 42,612, has been taken out by John Morgan, of Melbourne, for a building block, the outstanding feature of which resides

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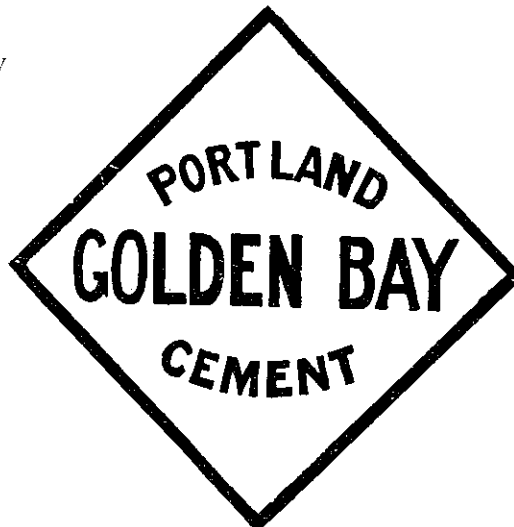
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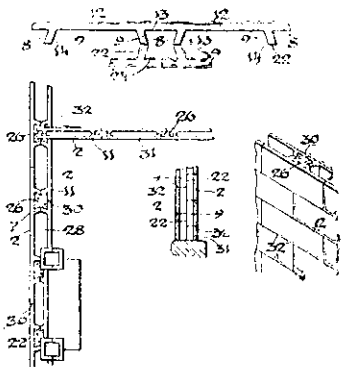
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in the formation on one side of the slab of a suitable number of vertically extending locking-pieces or ribs, which are adapted to form dovetail grooves or recesses extending vertically from the upper to the lower edges of the slabs. By arranging a series of these slabs opposite each other to form the double wall of a building, and with



the outer end faces of the opposite locking-pieces abutting each other, the dovetail grooves or recesses of the two opposite series of wall-slabs are disposed directly opposite and in communication with each other, thereby forming double or opposed dovetail passages to accommodate vertical columns of corresponding shape by which the slabs are locked together in assembled position.

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