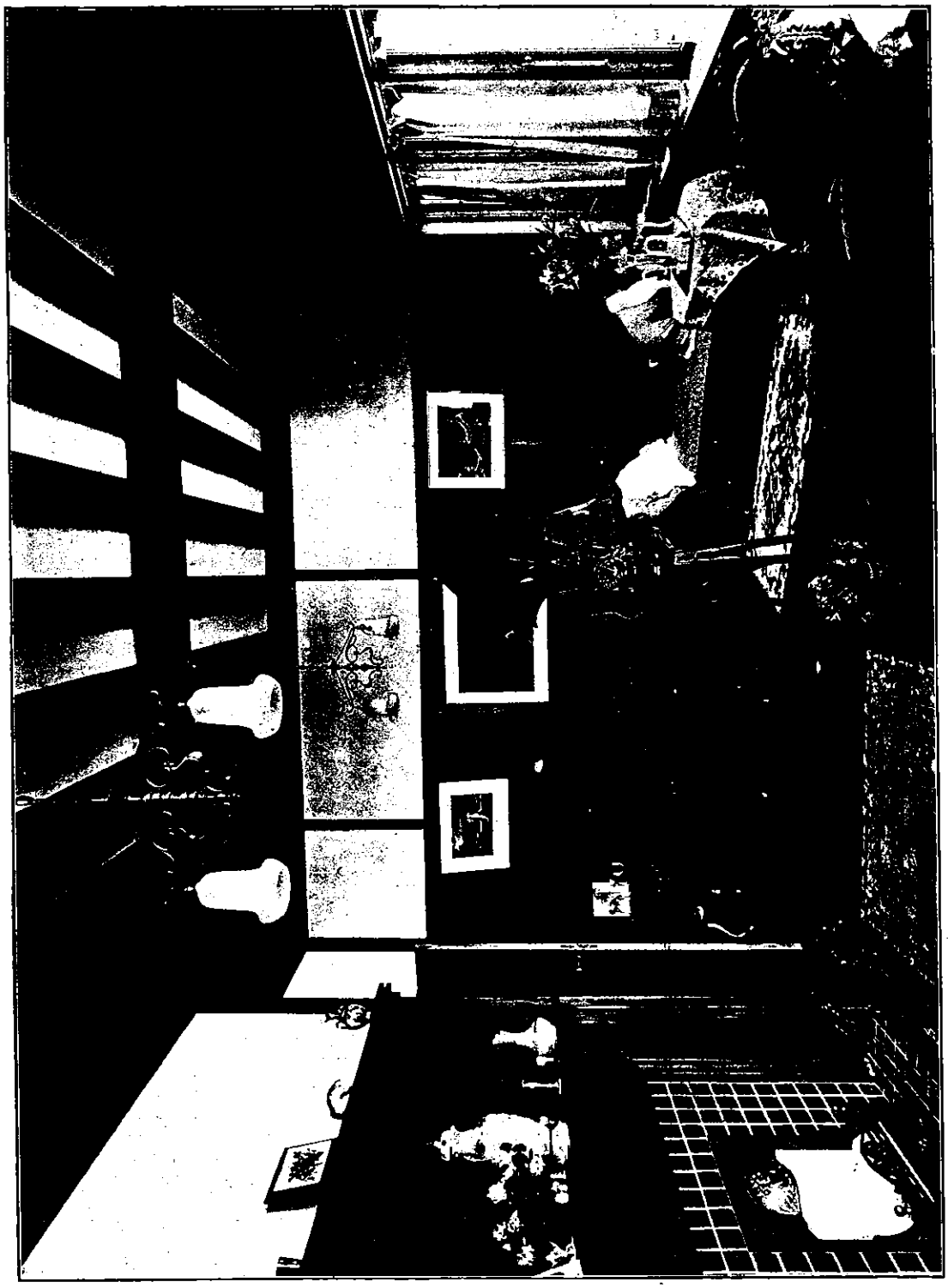

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The Editor will at all times be glad to receive Illustrated Articles on subjects of interest for consideration, provided the articles are short and to the point, and the facts authentic.

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

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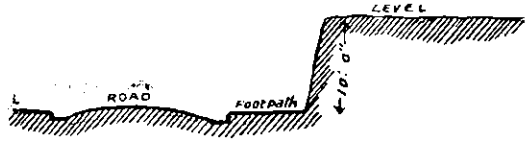
Publisher's Announcements.

Our 51st Competition

We offer a prize of £1 1 0 for the design adjudged to be the best for a

Motor House

with accomodation for two large sized cars and facilities for cleaning and general repairs. Building to be fire-resisting. No limit to cost, but lavish expenditure to be avoided. Building to be situated in clay bank about ten feet high with unlimited width and depth. Drainage and ventilation must be shown and explained. Access to back of garage from upper level is also required.



Drawings required: Plan, elevation and two sections to ¼-inch scale.

Mr. Wm. Fielding, Architect, of Wellington has kindly set this subject.

Designs must be sent in, in black and white under a nom-de-plume, addressed to **Progress**, 8 Farish Street, Wellington, and marked clearly "Fifty-first Prize Competition" on outside with a covering letter giving competitor's name, and address of employer. Designs to be sent in by February 10th. 1917.

Our 52nd Competition

We offer a prize of £1 1s. 0d. and a second prize of 10/6 to the two best designs submitted for

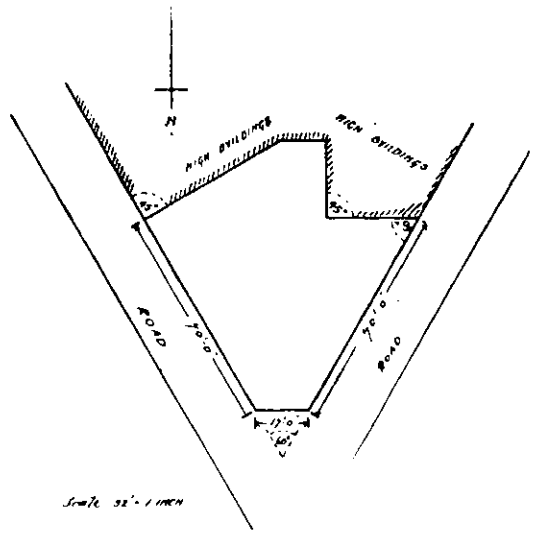
Banking Premises

(A problem to illustrate the value of Axial Planning), in accordance with the following conditions:—

One of the leading Banks propose erecting a new branch building in the foremost city of the Dominion: the site chosen is situated at the juncture of two principal streets.

It is desired that the banking chamber shall extend as nearly as possible the full width of the site, and also that the same shall be symmetrical. In this instance a corner entrance must be arranged for, and no columns or piers are to occupy the floor space of the chamber.

The accommodation required must include in addition to the banking chamber, manager's room with fireplace, staff toilets and cloak rooms for both sexes, stationery room, staff luncheon room with small kitchen, living room and bedroom for janitor. The first floor to be so arranged with offices that it will be suitable for rental purposes, proper accommodation must be provided for both sexes in the way of lavatories etc., and a separate tenant's entrance given from the street.



There is further accommodation that should be provided for in modern banking premises, and the student is invited to include in his design any other features he may consider desirable. In planning, economy of space must be constantly borne in mind, and as the banking chamber should be well proportioned in height to the floor area, the student is asked to consider, carefully, some means whereby the other rooms, etc., may be also proportional in height to their floor area. Good lighting is of the utmost importance and it is necessary that the plan should show the positions of the counters etc. allowing generous space for the "Public."

The elevations must express the purpose of the building and although cost is of no object, anything in the nature of vulgar and meretricious ornament must be avoided. It is suggested that the facades be treated in the style of the French or the Italian Renaissance. Drawings required are:—Plan of each floor; longitudinal section to 1/16 in. scale; elevation of one side and also of corner to ⅛ in. scale; one detail of a portion of the banking chamber for the full height, and showing a section of the portion so taken (not to include any counters or fittings) to ½ in. scale. Drawings to be in ink, but elevations must have shadows cast at angle of 45 deg. and window openings may have graded washes. No perspective.

Mr. Claude Jones, Lic. R.I.B.A., who has kindly set this subject has generously offered an "extra" prize of one guinea to the best design sent in. He explains in a letter to the editor that the problem requires "thought" on the part of the student, and is a subject that should be of great benefit to the student.

[*Continued on page 855*

Vol. XII. No. 5. Monthly

REGISTERED AS A NEWSPAPER

N.Z. BUILDING

PROGRESS

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

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

Editor: Chas. E. Wheeler.

Incorporating the Journal of the New Zealand Institute of Architects.

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WELLINGTON, AUCKLAND, CHRISTCHURCH, AND DUNEDIN, NEW ZEALAND, JANUARY, 1917.

Contents for January

Editorial Comment

Industry after the War

WHEN the war is apparently approaching the stage of victory for the Allies, and we may begin to look forward to resumption of supplies from the Mother Country, we receive a pamphlet printed on paper made in New Zealand. For over two years paper has been at famine price, and many kinds unprocurable because, in our easy English fashion, we had been leaving it to the Continental makers to provide these particular lines. Now, we repeat, with the war nearly over, New Zealand paper makes its appearance in an experimental form, used for publishing an effective address by Mr. J. A. Frostick, a well-known Christchurch business man, on the vitally important subject of post-war industrial reconstruction. Nothing could be better than the paper itself to point the moral which Mr. Frostick forces home in many strong phrases. When the famous McNab Land Bill was under consideration in the House of Representatives in 1906, a clause was inserted permitting the setting aside for the use of paper manufacture, a large tract of poor bush in the Westland land district. With ample supplies of water power, and an almost unlimited quantity of the right timber for pulp, it seemed only a question of the time necessary to get out the machinery, and we would be able to boast another industry, depending on our bountiful natural resources. But valuable time was fooled away, a valuable concession probably hawked about for spectulative profits; and New Zealand, with all its paper pulp resources, was "caught short." Ten years wasted! Now the necessary capital is being raised, and doubtless, after the great opportunity has passed, New Zealand paper will come on to a market by the time other papers are coming in again. The story is quite typical of the way in which things industrial are managed in this country, marvellously prosperous, in spite of our lazy, careless methods, only one remove from those of the dusky denizon who need not work hard, because bread fruit and the cocoanut will fall into his mouth if he has enough energy to move to an easy couch beneath the self-sown tree. We could tell a similar story of the wonderful Parapara iron-ore deposit, but enough has been said to emphasise our point that industry needs more careful organising in the future.

Another Opportunity

THE Board of Industries organised in Canterbury will keep the subject well to the front, as it deserves, for we are approaching another opportunity. After the war, emigration will be resumed with redoubled strength. Skilled artisans will have saved enough in England, out of their ninepence an hour, to travel to this land of promise where one and threepence is the living wage minimum. They must be absorbed usefully, and this is the chance of our secondary industries. The writer, having some knowledge of the way in which skilled men from the Old Country have been coming here without aim or organisation, and becoming lost—so far as their special skill is concerned—by absorption in the ranks of the well-paid unskilled labour, once questioned a gang of co-operative labourers engaged in navvying on the Main Trunk Railway. He found that the dozen imigrants included two brass finishers, two who had been in charge of bicycle making machinery in Birmingham, and three of their friends who formerly worked in a department of the celebrated Tangye works. And, for want of opportunity here, they were navvying, and were quite satisfied, though there might have been, even at that time employers who would have been glad of their special skill and experience. Mr. Frostick urges New Zealanders to secure economic independence by developing their own industrial resources, and the Board of Industries includes as one of its planks in a businesslike platform, "The establishment of direct relations with the Government of the day, so that proper provision may be made by legislation for the encouragement of every form of enterprise through which the national wealth may be created, and constant employment for the people assured." We cannot agree with all that Mr. Frostick has to say. He is rightly insistent upon the necessity for protection, but we would urge that this can be carried too far. The boot industry, in which he is personally interested, is not a good example of benefit to the community from extensive protection. New Zealand can produce the boots, but the price keeps just a shade under that of the heavily dutiable imported article, while the leather, by reason of defective tanning or the use of inferior materials, is not always as satisfactory as we should expect in a country where the raw material is plentiful, and of the best quality. Nor is Mr. Frostrick fair to past generations of New Zealand statesmen in declaring: "We have made no attempt to build up national reserves, from which to discharge our public debt. We are throwing away our opportunities to create national wealth, without which New Zealand can never become a successful nation. I realise that the lethargy of the people is so deeply seated that no words of mine can have any effect unless a reasonable number of business men add the weight of their words and influence." Evidently the critic is not aware of the excellent sinking fund system established by Sir Joseph Ward, in the Public Debt Extinction Act, 1908, under which our public debt is being wiped off in seventy-five years, while in the case of the Dreadnought loan, the present generation will pay for it. Then, against this so-called load of debt we have a State railways system worth a good deal more than the money which has been borrowed to pay for it, and being constantly improved, partly out of revenue, yet all the time giving to industry the greatest of boons—transport at bed-rock cost price. Protection, if given to industry, must not be regarded as a soft blanket in which the manufacturer can wrap himself up, and become oblivious to the progress on the other side of the tariff wall. Some of our secondary industries have been run on lines which make the general public heartily sick of protection. We must avoid prejudicing the case for development by too much talk of tariff. Our fifteen thousand miles of isolation constitutes moderate protection at any rate. Wages are high in New Zealand, but American manufacturers have shown us what high-paid and well-directed labour can do in turning out goods at low rates. Our cheap power, and a plentitude of raw material, will more than counterbalance high wages, so that the outlook for industry in this country is quite promising. Our most pressing problem in that respect is to get to work with plans, so as to be ready to welcome the worker:

When the ships come back from slaughter
And the troops come back from war,
When the havoc strewn behind
Threatens the road that lies before;
Every hero shall be welcome,
Every orphan shall be fed,
By the man who sticks to business—
By the man who keeps his head.

A Voice in the Wilderness

TO raise the Town Planning issue in New Zealand just now, when everyone is concerned about the woolgrowers' profit, the cost of wheat, the latest conscription ballot, and the Great Northern Derby, is like a voice crying in the wilderness. But there are a few far-seeing communities concerned about this question, which will have to be considered for the good of the community, no matter what the price of bread, or what horse wins the race. South Australia has passed a comprehensive Town Planning Act. Its preparation was entrusted to the well-known enthusiast on the question, Mr. Charles C. Reade, who wisely accompanied its first appearance with a report on the whole subject, and an explanation of the Bill. His proposals are substantially what *Progress* has been advocating for this country, namely, the establishment of a central Town Planning Commission, consisting of three experts appointed by the Governor, and responsible to the Ministry, and through them, to Parliament. It is not intended to be a departmental body riding roughshod over the existing municipal authorities. While exercising the necessary supervision and directing policy on broad lines, it is intended to helpfully co-operate with these authorities in the preparation of any town planning works to be submitted to the Government for approval. A local Town Planning Board may be appointed by the Governor for dealing with the problems of the area surrounding Adelaide. These bodies are not to be merely advisory. They have active powers. They may make Town Planning by-laws, acquire property, needed in carrying out a scheme, and pay compensation, or exact betterment. The last is a vitally important provision, which ought to be incorporated in our own legislation without waiting for the long-expected Town Planning Bill. Thousands of pounds are spent in New Zealand by the Government and by local authorities which directly benefit property owners who, at the best, take up the passive resistance attitude when improvements are suggested, but who wake up to activity when the improvement warrants charging more rent.

The Quebec Bridge Failure

CAUSES OF THE DISASTER ANALYSED

The collapse of the centre span of the great Quebec Bridge when it was being placed in position is discussed in this article by Mr. Arthur E. Evans, Resident New Zealand Engineer of the Trussed Concrete Steel Co. Ltd., and the cause of the failure clearly shown.

For the second time in the short history of the Quebec Bridge project, disaster has come at the eleventh hour. It will be remembered that nine years ago, when the southern half of the old bridge was completed nearly to the centre of the suspended span as a cantilever structure, the entire half bridge collapsed, this failure being due to insufficient lacing to a main compression member.

collapse. Engineers of the St. Lawrence Bridge Co., and outside engineers retained by them, as well as members of the Board of Engineers, took part in these examinations.

The results have been unofficially communicated to the American technical press, and an invitation was extended to them for a separate survey. An accurate and fully detailed description of what happened is not

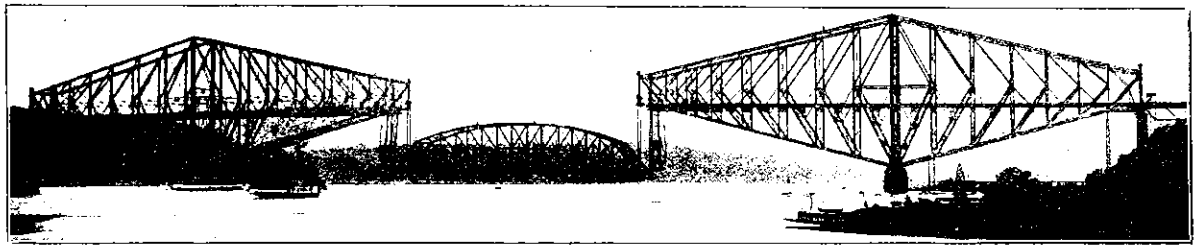


Fig. 1. This photograph, snapped almost at the moment of collapse, shows the exact conditions immediately preceding the failure.

In the present structure, investigation has revealed a remarkably complete and exact record of how and why the suspended span fell from its supports on September 11th. This record is found in the condition of the parts left at the truss seats on the lifting girders, and affords a remarkable picture of the whole sequence of failure.

possible, as events followed each other so rapidly in the few seconds from the time the span started until it had pulled loose from the last support.

There was no lack of expert eye-witnesses, as the disaster was observed by over a hundred of the most eminent structural engineers of both Canada and the United States. To summarise concisely the rather

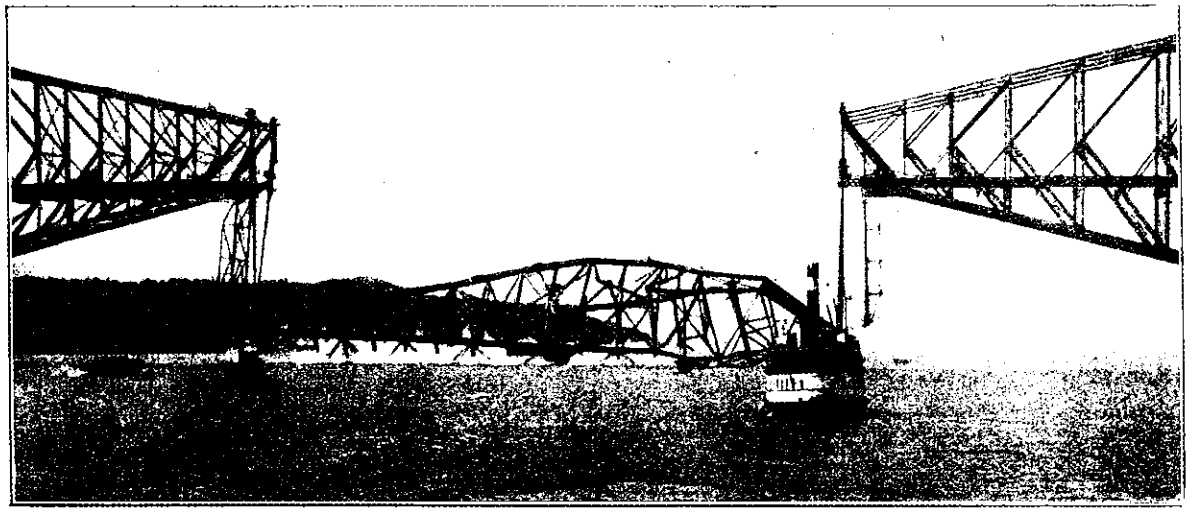


Fig. 2. The falling span photographed a moment before the southeast corner of the span tore loose from its seat.

The work of making a detailed examination of the structure to detect any evidence as to the cause of the failure was started within a few hours after the

voluminous evidence at present at our disposal: A steel rocker casting, by which the weight of the south upstream corner of the suspended span was trans-

ferred to the lifting girder, broke in such a manner that the girder kicked back in a south-westerly direction from under it. This corner of the span dropped into the water, starting transversal rotation of the whole south end of the span. For an instant there was heavy extra load on the down-stream corner of the span, but the hanger held, and when the tipping had progressed far enough the south-east corner also left its hanging support and dropped into the water. Owing to the weakness of the laterals, the rotation of the south end of the truss was not very largely communicated to the north end, the trusses crumpling at the pin-connected joints. Excepting

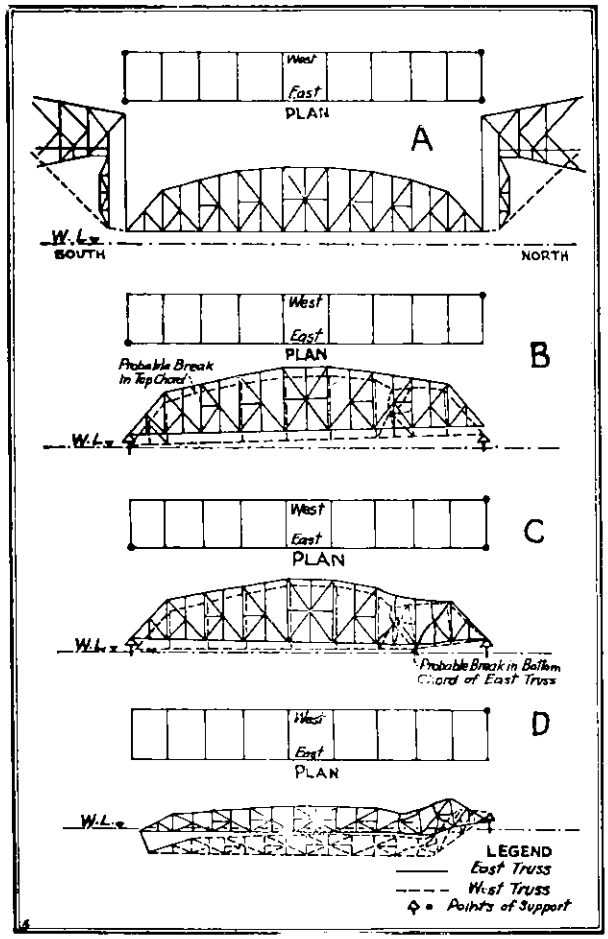


Fig. 3.
A.—Just before the accident. *B.*—Southwest corner gone.
C.—Failure of east truss. *D.*—Final plunge.

for a slight reflex action at the north-east corner, both corners at the north end hung on until the other end of the span had disappeared under the water; then they dropped practically simultaneously.

To understand fully what occurred it is necessary to comprehend clearly the detail of the rocker-joint bearing between the lifting girder and the suspended span. Reference is made to the accompanying photographs Figs. 4 and 5, and to the drawing, Fig. 6. The main features of the bearings are three low-carbon steel castings and two forged pins. The pins are at right angles to each other and with the castings form a universal joint. It should be noted that the bearing as shown in photograph Fig. 4 does not represent the actual hoisting condition. Two hitch connections carried the lifting girder while the span was being floated up the river on scows from Sillery Cove, where it had been erected. Then centreing plates were added to ensure perfect centreing of the lifting girder on the bearing when the load was transferred to the hoisting chains. These plates were shop-fitted and bore against a chipped surface on the pin-bracket C of the intermediate casting, Fig. 4. A black streak at D shows plainly where the chipping was done in one of the corners of the casting. The plates and castings were match-marked, and therefore it was impossible to put them in place until the girders were actually centred on the intermediate casting. Once in place they prevented movement in a direction parallel with the length of the span. Their use permits one to immediately dismiss any theory that the load was placed eccentrically on the girder and caused it to cant. The condition of the south-west lifting girder after the span had fallen is clearly shown in Fig. 5. The photograph was taken looking in a south-westerly direction. The face of the girder shown is toward the channel, and the hanger is the upstream or westerly one of the pair. It will be noted that the centreing plate which was bolted on at M has been sheared off, and the plate attached to N ripped loose, and lies twisted in front of its former position. The bolts of both N and M were sheared downward and forward at 45°. The plate at O has disappeared, the bolts having been sheared off vertically while the remaining plate P lies crushed down vertically against the pin, and of four bolts, two sheared vertically and two are intact. The hitch connection lies over the crushed plate. The pin is scored in a diagonal direction, and has been rotated eastward (*i.e.* towards the reader) a circumferential distance of 1½in.

It is certain from this photograph that the span did not "slip" off the pin. If slipping had taken place, the plate P would have disappeared, the scoring of the pin would not have been diagonal, the pin would not have been rotated and the damage to the angles at Q would not have occurred. The key to the whole evidence on this hanger lies in the condition of the two centreing plates O and P (*i.e.* the west centreing plates). These plates are the only points on *any* of the hangers where direct vertical action is indicated; all other details show a combination of turning, twisting and sliding. The vertical injury to these two plates must have preceded all other effects. The condition of the plates and bolts of N and M indicate a backward movement of the girder occurring on the east side of the pin simultaneously with the dropping of the truss shoe. The condition of the lower pin also indicates backward movement of the girder and also a crosswise movement of some superimposed burden. The condition of the hitch connection angles at Q indicates the same movement as shown by the pin. The initial steps of the accident are made apparent by the above conditions at the south-west hanger. Something must have broken in the north-east quarter of the shoe detail (*i.e.* above Q Fig. 5). It could have been only the intermediate rocker casting (see photograph Fig. 4 and view Fig. 6). The

fracture most probably occurred near the root of the front lower pin-bracket of this rocker, putting the bearing on the lower pin out of service; and also it is

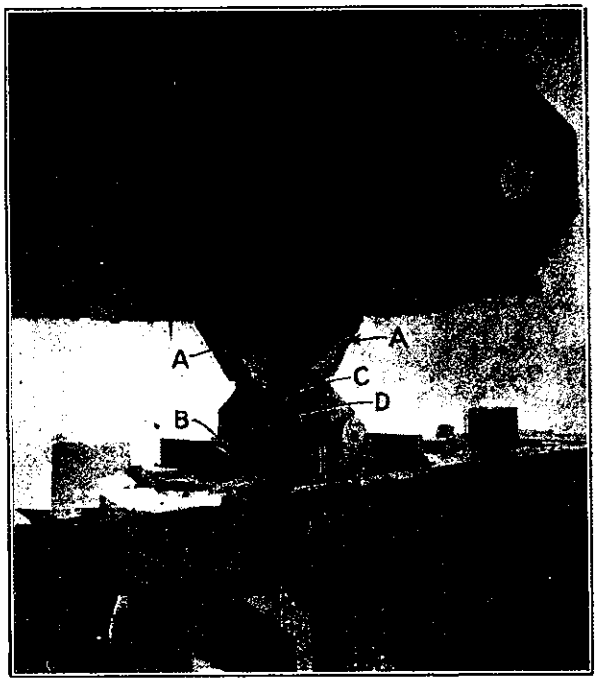


Fig. 4. Rocker-joint bearing between lifting girder and suspended span.

most probable that the fracture entered the upper pin seat and one of the upper brackets. The enormous load of 1,200 tons concentrated on the edges of the fracture must have caused crushing, tipping of what was left of the rocker, and some backward movement of the lower shoe and lifting girder.

It was incidental to this stage of the disaster that the westerly fragment of the rocker bore down on the two west centreing plates O and P Fig. 5, and in the same action the fragments of the broken rocker were ejected from between its two pins like an orange pip, and, the impulse kicking back the entire swinging girder, the corner of the span fell free, only grazing the lower pin and the cover plate of the lifting girder as it went off.

The breaking of a main truss member- and this possibility has been dismissed by every engineer for obvious reasons, as well as on the basis of the photographic evidence afforded by Fig. 5 and by those who witnessed the fall of the span—would have probably carried the end off in a direction parallel with the lower pin. Also the truss continued to hang on at both ends after its members had actually came apart, which proves that the *initial* failure did *not* occur in any of the members of the truss itself.

So much for what actually happened. It does not tell us what caused the initial failure. For this we must look to the design of the rocker casting, a sketch of which is given, Fig. 6. What were its loads and stresses? Was it designed with sufficient strength? The entire end support of the suspended span was designed for a 3,000,000 lb. load at each corner, which figure includes an impact allowance of 20 per cent. At the time of the failure, however, the span was perfectly quiescent, and there can be no question of impact addition at the instant previous to failure, so that the load was really 2,500,000 lbs. There was a possibility, with respect to the load on the rocker at other times, of an increased load due to lifting one corner a trifle ahead of the adjoining corner, but this would not add appreciably to the normal shoe reaction. All the rockers carried the span while on falsework at Sillery Cove, and bore an overload of at least 15 per cent., without failing or showing any signs of failure. This overload was from a 30-ton loco. crane, track and material trains. In addition, it had resisted the longitudinal tipping moment arising from friction on the pin, as the span slid along the lower rocker pin, due to expansion on the falsework. This friction is estimated at possibly 8 per cent.; its overturning lever arm being about 10in.

A copy of the St. Lawrence Bridge Co's stress calculations for the design of the rocker casting shows that it has three parts. The first has reference to the bending effect on the lower arm of the rocker and *assumes that the casting deflects away from the pin just enough to reduce the stress intensity due to bending moment at the root of the bracket to the specified unit stress of* 20,000 *lbs. per sq. in.* The unit stresses for erection material were fixed by the Board of Engineers' specifications at 20 per cent. higher than those allowed in parts of the permanent structure. The second and third Computations deal with the lower pin and lower shoe casting, using the same method of calculation. This "tempering of the wind to the shorn lamb" might be applied to even smaller

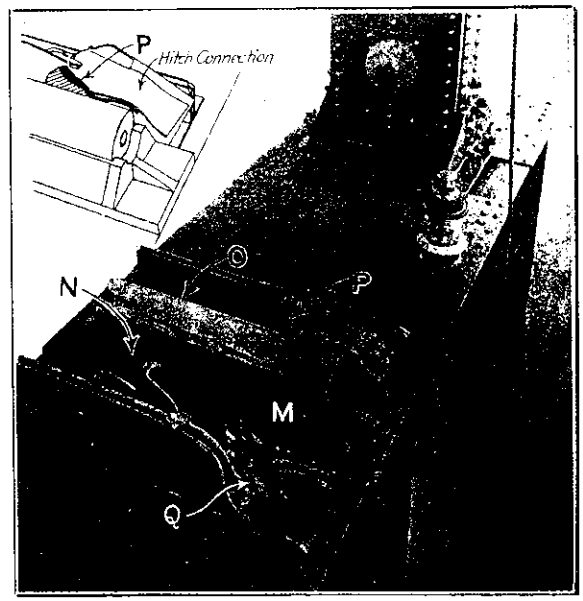


Fig. 5. Initial break occurred at southwest corner here shown.

castings and pins with the same results, except that still shorter lengths of loading would be found. As an instance, if we take the width of the rocker bracket

to be 7¼in. instead of 9½in., they would only be three quarters as strong; yet the Bridge Co's method of calculation would show the same bending stress of 20,000 lbs. per sq. in., *i.e., it would show them to be just as safe as the original bracket.* This process could evidently be continued up to the point where the bearing stress was the limiting factor, which being viewed superficially, is absurd.

These calculations afford a striking example of the question whether a part may be stronger than the whole. Is it possible for a piece to be strengthened by the cutting away of some portion of it? The rocker under consideration would figure out to be strong enough if the longitudinal brackets were cut down to one half their length. Are we justified in saying that the casting, without any such cutting, is also strong enough? Taking the view that the smaller part is *necessarily* the weaker, one is tempted to answer "yes," but in the case in hand such reasoning is a fatal error. Simply regarded, the "stress calculation" is merely a formal computation to verify *minor features* of the design. It does not analyse or

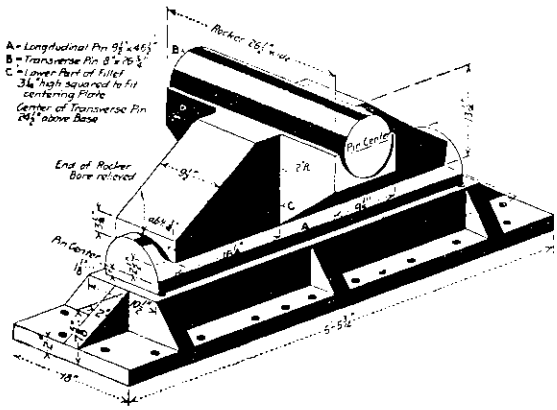


Fig. 6. Rocker and Lower Shoe.

Sheet lead ⅛ in. thick under shoe. Centreing plates bolted to sides of shoe and projecting up to fit tight against side bracket at C.

approve the design, but tacitly accepts the design as adequate and deduces a few auxiliary figures from it, and is therefore chiefly significant as being an expression of complete faith in the trained eye and sound judgment of the designer who proportioned the casting. Unfortunately, events have not justified this faith. It will be seen on reference to Fig. 4 that at D the angle fillet had been chipped away to form a bearing for the centreing plate, making this the weakest part of casting as it had to bear the highest stress. The more usual method of calculation, based on the assumption of an uniform distribution of load along the full length of pin gives a bending stress (tension) of 43,000 lbs. per sq. in. at the lower edge (only ¾ in. wide) of the longitudinal bracket.

The loss of the span, while it may appear to the lay mind to cast discredit on those responsible for the work, in reality put the remaining parts of the structure to a most extraordinary test and so proved the ability of the designers and builders. The cantilever arms deflected between 9 and 10in. under the 5,000 ton load from the suspended span; the application of the load was gradual, its release on the contrary, was sudden. Men on the ends were thrown down, while the vibration lasted long enough for one man to run about 250 ft. toward the anchorage. The known details as to the successive steps in the plunge show that very large overloads must have been borne by the down-stream truss on the south cantilever, and the upstream truss of the north cantilever. Yet the cantilevers stood; and now stand as a silent tribute to the marvellous precision and finish of the shopwork, the ingenious and highly successful erection methods, and to the splendid ability of the responsible engineers.

The latest failure can only delay for a short time the completion of the bridge. The suspended span is, after all, of moderate proportions compared with the gigantic cantilevers with which it will connect; and it will not be long before the successful placing of a new suspended span will be recorded.

For many of the details, and five of the illustrations we are indebted to the "Engineering News" and "Engineering Record."

The Young Architect

The great mistake made by the young architect at the beginning of his career is usually his failure to recognise that the world in which he lives is not supremely interested in architecture written with a capital letter, and has not the time or inclination to make a close and intimate examination of the architect's qualifications.

On the other hand, everyone enjoys pleasant and congenial companionship in daily life, and the architect who has lived a self-centred life of absorption in one pursuit is frequently a dull or boring companion in society. His natural anxiety as to his own future will, unless he is careful, operate directly against his chances of success, and when he obtains work he should remember that it is more to his advantage to have converted a client into a friend than to have pleased himself with the design of a building which, in any case, he will regard as a tentative effort in the future.

We do not mean that he should be as wax in the hands of his client, or fail to do his utmost to produce good work, but he should avoid the mistake of overestimating the importance of what he is doing. Anxiety is an enemy to success, for the anxious man is one who spoils his own mental freshness and force in dealing with the affairs before his notice, and he will recognise that he can neither anticipate fate nor see clearly what it may bring him in the future.

The greater the number of interests he has outside his own work the greater will be his chance of making friends, and on his capacity to do so will depend in a large measure his future success.—"*The Builder.*"

Architecture and Building

[Note—The Articles appearing on pages 843 to 850 are published by arrangement with the New Zealand Institute of Architects.]

"What is Art, and who are Artists?" —No. IV.

By S. HURST SEAGER, F.R.I.B.A.

I have contrasted the symbolic "Bull' of the Assyrians with the naturalesque lion of Landseer's. Both are extreme examples. Let us therefore glance at two equestrian statues both having the same aim—the glorification of celebrated warriors. In No. 16 we see that of Richard Cœur de Lion by Baron

Fig. 16—Richard Coeur de Lion, giving no Impression of Strength or Power.

Marochetti standing in front of the House of Lords in London, and in No. 17 that of Bartolomeo Colleoni at Venice by Andrew Vernocchio. The feebleness and lack of war-like qualities in the one are emphasised forcibly by contrast with the strength and the irresistible force and vigour in the other. It is in fact acknowledged to be the finest equestrian statue extant.

In sculptured ornaments, as well as in other branches of art, the same principle of generalised imitation must be worked upon, and was worked upon in the true art epochs. No natural flowers were exactly copied, but the principles seen in foliage were grasped, and used to express the qualities intended, as in the beautiful thirteenth century foliage (Fig. 18), which, though admirably conventionalised, still gives a truthful idea of the growth of plants, and fills the space it occupies in a most natural and charming way. Here there is no pulling to pieces of Nature's flowers and piecing them together to fill the required space, as so often seen in the works of impure taste; it is the result of a close study of Nature, by means of which alone artists can produce true and original works.

It matters not in what style the artist expresses himself, it is equally true of all pure styles, for in the collection of Greek ornaments (Fig. 19), pleas-

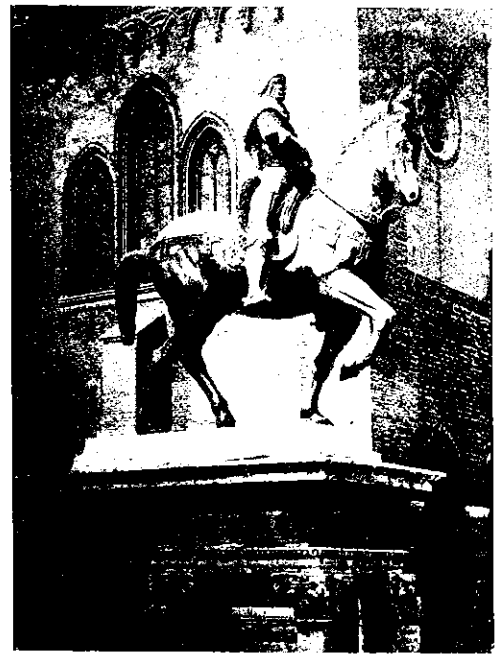


Fig. 17—Bartolomeo Colleoni. Depicting qualities of Power and Force.

urable sensations are created by the artists having imitated the principles of radiation and the beautiful lines of double curvature, without copying the plants in which they are seen. For want of a better name the ornaments are said to be combinations of the honey-suckle ornament, but you can see that it is only the peculiar curve at the end of some of the forms which sufficiently indicates its source to give it the name.

In the painter's art, too, we see illustrations of the same principles of generalised imitation—the same passing through the "alembic." Few painters have been successful in conveying the idea of Divinity. So conscious were the early Christian painters of their lack of power in this respect, that they almost invariably put a halo of golden light, called the "nimbus," behind the head as a proof of holi-

ness, or mark of divinity. We have seen that in the case of the statues of the Greeks, which they carved to represent their gods, nothing more than perfect human beauty was aimed at, the beauty of the body, the passionless beauty of form; no ancient statue expresses by the countenance any one elevated character of the soul, no majesty of feeling that might mark the features for supernatural. The Christian painters, on the other hand, while they endeavoured to portray whatever typical beauty the human body possessed, deducing their general proportion and types from comparison of the nobler individuals of the race, concentrated their full power and thought upon the expression of countenance, striving continually to express divine beauty—the beauty of holiness.

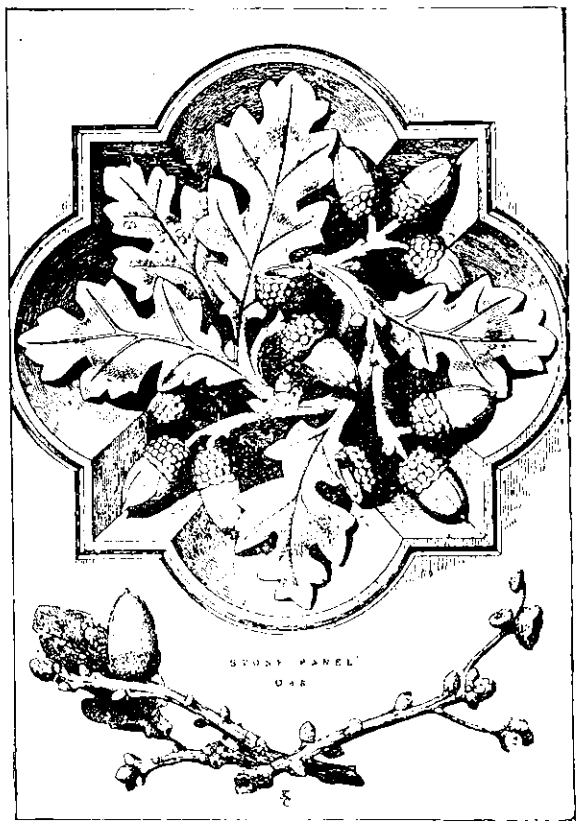


Fig. 18—13th Century Sculptured Foliage Ornaments.

In the beautiful conception of Raphael's Madonna di San Sisto (Fig. 20), no nimbus is needed to tell us of the holiness of the Madonna; this face of hers, which earned for him the title of "divine," is no mere perfection of human beauty. He has passed all the beauty, seen in Nature, through the "alembic"; but to the result of that he has added the full depth of his own pure soul and noble feeling, which we can measure in our degree as we gaze on this inspired work. Although the whole is made up of beautiful parts, the transcendant beauty of the face of the Madonna attracts us to it; and when all the surroundings will have vanished from our minds, the memory will still cling tenaciously to this figure, and that of the infant Christ, nestling closely to it.

These are examples of the highest kind of art, for we see in them that idealisation is reached by emphasising the general idea, the universal points of resemblance seen in those natural models possessing the quality intended to be expressed. The qualities which are common to a class may even be exaggerated, and are exaggerated, in many of the finest idealistic works. But if there be any exaggeration of individual peculiarities, caricature is the result. And this distinction makes the whole difference between the highest and lowest kind of art. Hogarth was a caricaturist of great talent. In his "Laughing Audience" (Fig. 21), all the figures are exaggerations of individual peculiarities, and to the boisterous controtions of imbecility are added the elements of vice. His pictures are said to be novels written with the brush, but if so, they are novels of a very low order; there are in all, it is true, evidences of great power and technical skill, but he has, to my mind, fallen from the high platform of true art, when he descends to the representation only of the different forms of vice. There are in his pictures no indications of a love for the beauties in our natures; no loving lingering upon some redeeming virtue; all is dark, harrowing and loathsome—loathsome that is, to the finer spirits; to those whose vice they represent, they give no pain.

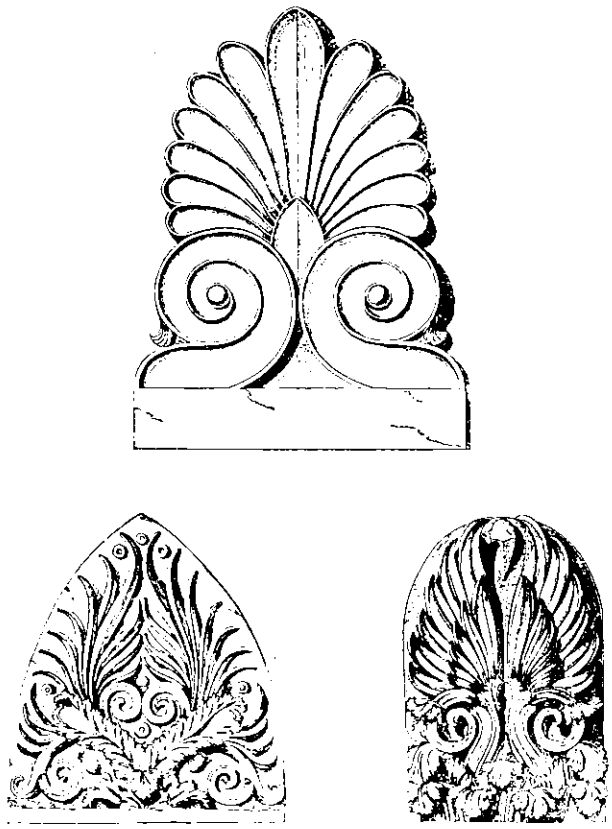


Fig. 19—Greek Ornaments showing Beautiful lines of Double Curvature.

A vicious man is rather pleased than pained by the depiction of his vice, for it treats of something, however degrading it may be, which to him is pleasurable; it is something he understands and can judge of, as to the probability of its truth. I have heard a man loudly praise an eloquent sermon treating of the vice to which he was notoriously addicted, and that he derived pleasure from the preacher's efforts is proved by the fact that he took pains to hear him again; yet at the same time making no attempt to alter his mode of life. This is no singular instance; unfortunately, it is of far too frequent occurrence, and must have come within the experience of us all. Why is this? Why, in holding up the mirror to vice, does the reflection please its disciples? Is it not because the love of truth clings on to fallen natures long after the stream of sin has washed away the bonds of conscience? Be this as

Fig. 20 Madonna di Sisto, showing Expression of Holiness.

it may, the fact remains that they are pleased at the representation and exaggeration of their vices and weaknesses. We are told of one of Hogarth's satirical caricatures upon the vices of the society of his day, that "it delighted the public whom it satirised, and had an enormous sale." The portrayal of vice if it pleases the vicious, can but harrow the feelings of the pure, to whom the lesson it may be intended to convey is not of any value. What good purpose then does the record of vice serve? Simply none.

The wicked delight in it, and the pure, at first shocked, gradually become accustomed to the horrors it represents. "For it is ordained that repulsiveness shall be diminished by custom in a far greater degree than the sensation of beauty: so that the anatomist, in a little time, loses all sense of horror in the torn flesh and carious bone, while the sculptor ceases not to feel, to the close of his life, the deliciousness of every line of the outward frame." We cannot pass through life without being made to feel more or less keenly the force of the evil which is in it, but the beauties of life may, in "the hurry and bustle for existence, in the crash of innovation and the race for wealth," escape our notice; and it is on these that artists should long and lovingly dwell. Torture and suffering should never be depicted for its own sake. Look at the Laocoon Group (Fig. 22). If we fully understand its meaning, we can but be grieved at the story it tells—the tale of horror and suffering it expresses. The father, a Dardan priest, and his two sons are attacked by two sea serpents and thus squeezed to

Fig. 21—Hogarth's Laughing Audience, showing Exaggerated Individual Peculiarities resulting in Caricature.

death. "I suppose," says Ruskin, "that no group has exercised so pernicious an influence on art as this; a subject ill-chosen and only recommended to imitation by subtleties of execution and accumulation of technical knowledge." It is, indeed, a wonderful exhibition of technical skill in reproducing the anatomy of the human body; in this respect it is perfect, and commands a place in every school of art and academy in the world. But as a work of pure art, it cannot command our admiration. We may become accustomed to the picture of horror sufficiently to feel no repulsion when in its presence, but if so, some of the finest impulses of our nature it will be said, evil and good flow side by side in the troubled stream of life; and if we draw from it, we must perforce, gather in the bad and the good, the sorrow and the joy. Yes, this is so; and those

are the greatest artists, who, if they show us the stream of evil, show us, at the same time, that it is evil, and that the greatest happiness is to be derived by drawing from the stream of good.

From the illustrations you have seen, it is clearly evident that art may be either moral or not moral. The morality of an artist's work depends upon the good intention of the artist, as shown in the general effect which the expression of his thoughts and emotions are calculated to produce. To man, the helpfulness of art depends not only upon the wise selection of the subject, and the faithful representation of it, but upon the manifest aims and objects of the work itself. The work will be moral if the conception, as presented, is calculated to improve the moral health of society. In most of our grand Gothic Cathedrals, but especially in the noble one

Fig. 22—The Laocoon. A wonderful representation of Agony.

at Rheims (Fig. 23), there are seen thousands of figures in the buttresses, niches, doorways, pinnacles —even in the gargoyles; every "coign of advantage" tells its tale by some image or representation of some living thing, giving meaning and animation to the whole. Some of the figures on the exterior are revolting indeed, for they represent some of the worst vices by which man falls; but these are not presented independently of the whole work; the church as a whole is the work of art; these are only the details which have their purpose to serve. Thus, we see devils, imps and evil spirits of all kinds, peering over balustrades, or acting as water-spouts; but it is a beautiful idea which governs their use, for they are all on the outside, fleeing from the power of religion within, and are far outnumbered throughout the building by the elements of good. Thus, if we have the ugliness of degradation, we have also many types of divine beauty. By the side of passionate and despairing sin there stand figures of victory, sublime and calm. The devils are far outnumbered by the host of angels. There lurks the blur of human depravity; but as we pass under such a glorious portal as this, in which we see the heavenly host of angels and groups of long robed saints in prayer, the thoughts of sin fades away before the dream of Divine purity and peace.

I have endeavoured to show you some few of the main aims and principles which must be kept in view in passing Nature through the "alembic" of man. I have aimed at showing how the lamp of art must be trimmed and supplied if it is to burn with a pure light. But can this lamp of art, this bright light, burn for us here? Can it be made to illumine our path, so that we may "read as we run" the teachings which Nature's works convey? Here, where there is nothing to compare with those mar-

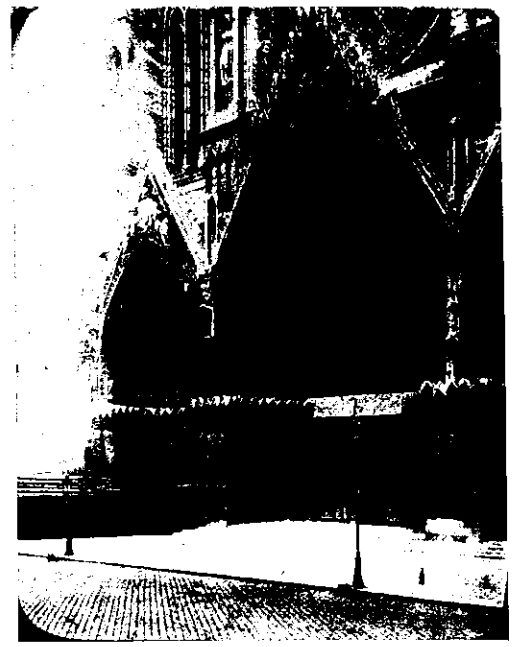


Fig. 23—The Western Portals of the Rheims Cathedral, showing the Beautiful Sculptures.

vellous works produced out of the glowing intelligences given to men of old? Can we be made to see that those things which help us simply to exist are much less useful to us than those which set the glories of the universe more brightly before us? It can never be, if we only continue to dream on and on; for all day-dreams are idle, unless we put to the best use those talents with which we have been endowed. We cannot realise by wishing, and our noblest thoughts and aspirations are but as "airy nothings" to which can be given no local habitation and a name, unless we

"Act, act in the living present,
Heart within, and God o'erhead."

No, the purifying influence of the beauties of Nature and of art, can never be felt by the people, until those who practice the arts work on true prin-

ciples, with a full knowledge and glowing enthusiasm worthy of the cause—until they cease to look upon their calling simply as a profession whereby they may be enabled to exist. It is not even enough that they themselves can appreciate the beauties in their own art and those of others, they must know why they do so. They must be able to analyse them sufficiently to point out the chief constituents of beauty in them to their fellows. Intellectual blindness is possible in love of beauty, as in other love, but the love that is blind can lead to no happiness; we cannot guide if we fail to see the dangers of the path we tread, and we cannot create a love in others for that which we admire, if we fail to see wherein consists the excellence of it. All workers in any of the arts, whether it be either of the shaping arts of Architecture, Sculpture or Painting; or one of the speaking arts, Music or Poetry; whether they appeal to their fellows through the medium of reason, or the sense of sight, or hearing; should all fell the responsibility which attaches to them, and should endeavour to practice their arts as such, to put into their productions the very best of which they are capable—their souls travail.

In any age of living art the artists produced the best it was in their power to do at that time. We find no inartistic works—no works executed on false principles—during a time when the true principles were understood and acted upon. It is only in modern times that good and bad work have been erected side by side, and that the excellence of the few has no effect on the baseness of the many: This should not be, and would not be if we were more earnest students of Nature, if we only observed more fully the beauties spread out in this our adopted land so lavishly for our welfare, if we looked beneath these for the underlying principles which are beneath them all, and used them as a standard for our guidance and instruction. We should then soon learn to know what is true and what is false in the works of man, soon have a high appreciation of those which show a loving study of Nature's laws, and be moved by them to a higher, nobler, aim of life. Those which are false would soon cease to be tolerated, and would be held in as great abhorrence as any acts which are not in harmony with honest, upright and truthful principles. It does not need that a work should be great, to be powerful or artistic—and herein lies our only hope of the influence of art being felt here. Each line by an inspired writer is stamped with his genius, and an epigram often contains deep truths and useful teachings.

We can admire the skilful working out of an intricate plot through hundreds of pages, but oftentimes the evidence of concentrated pure and noble thought in a single line stirs within us deeper emotions, and leaves a more lasting impression on our minds. A single strain of classical music carries with it all the effects intended, and in all the arts it is seen that a single touch of the master is enough to make his influence felt. This is equally true of the works of Nature. It is only by the aid of the most powerful microscope that we can discover the beauties which exist in minute specks and organisms. All the qualities for which we value the diamond are found in a small piece; the additional value which we attach to such large gems as the Koh-i-noor simply arises from its commercial value, and those feelings which are roused by its expression of brilliant purity are altogether quenched by the flood of emotions of a less noble nature, created by the knowledge of the price it would command in the world's market. We need have no fear that because we are unable to erect works of great magnitude the influence of art would be lost. The artistic value of any work is quite apart from its cost, and in fact oftentimes only exercises a beneficial influence on the beholders, in an inverse ratio to the amount expended on its production.

Cost, then, is no hindrance to our progress in art and all its enobling qualities; study and thought are all that are required, both on the part of workers, and of those for whom we labour. There can be no advance on the part of artists, unless they become thoroughly imbued with a love for their art, and possess an earnest desire to do the very best they can, in whatever sphere they are called to work. But the effect of their advance is lost, and any further progress is impossible, unless the people are cultivated to see and appreciate it. This they can only do by earnest strivings after truth in every relation of life; for this eternal principle is the very foundation of all pure and noble work. It is the spirit, then, in which our forefathers laboured, rather than the mode in which they expressed themselves, that we should strive to imitate. It is within the power of us all to do this, if we only read as diligently as they read the "Book of Nature." If such a time arrive—and let us hope it may—there will be but few among us who will not feel and know what Art is and who are Artists.

Minutes of the Eleventh Annual Meeting of the New Zealand Institute of Architects (Incorporated), held at the Accountants' Chambers, Johnston St., Wellington, on Wednesday, 29th November, 1916, at 10 o'clock in the Forenoon.

PRESENT: There were present; President, Mr. W. A. Cumming; Past Presidents, Messrs Chatfield, Atkins, Mountfort, and Wales. Vice-Presidents, Messrs Crichton and Walden. Elected Members, Messrs Allsop, Lawrence, Hurst Seager, Clarkson, Hooper, and Roberts. Together with Mr. Gray Young, Honorary Secretary, Mr. J. S. Swan, Honorary Treasurer, and the Secretary. Mr. G. W. Gough of Dunedin was present as a visitor.

Before Commencing the business of the meeting, Mr. C. A. Lawrence, the Chairman of the Wellington District Branch, on behalf of his Branch, extended an invitation to the President and Members of Council to a lunch at the Grand Hotel at 1.15 p.m., and to the theatre in the evening. The President on behalf of the members of the Council accepted the invitation with thanks, and in terms of appreciation.

APOLOGIES: Apologies were offered and accepted on behalf of Messrs Hart, Salmond, Broderick, and E. R. Wilson.

PROXIES: Proxies were lodged by Mr. J. L. Salmond in favour of Mr. Hooper, and by Mr. G. S. Goldsboro' in favour of the President.

MINUTES: The President moved, Mr. Atkins seconded, and it was agreed,—

"That as the Minutes of the last Annual "Meeting have been printed and circulated "they be taken as read, and be confirmed."

PRESS: It was resolved on the motion of the President that the meeting be open to the press.

ANNUAL REPORT OF COUNCIL: On the motion of the President it was resolved,

"That the Annual Report and Statement of "Accounts having been printed and circulated "to all Members it be taken as read."

The President then moved the adoption of the Annual Report and Statement of Accounts and commented on the work of the past year. He also explained the accounts which were, for the first time, presented in a new form. There had been very heavy expenses this year which would be non-recurring and next year we could look forward to better financial results.

Several members spoke to the motion after which the Report and Statement of Accounts were adopted.

REPORTS OF DISTRICT BRANCHES: The reports of the several District Branches together with their statements of account were read to the meeting. The reports disclosed the fact that though the activities of the Branches had been in a great measure curtailed owing to the war, their usefulness still remained, and it was evident that good and substantial work had been done during the past year. On the motion of the President these reports were adopted.

REPORT OF SPECIAL COMMITTEE: The Special Committee set up to enquire into a charge against a member in Wanganui, for a breach of the Regulations made its report; in that report the Committee exonerates him, and at the same time commends the complainants for having acted from a sense of public duty and loyalty to the Institute's Regulations.

It was resolved on the motion of Mr. Wales, seconded by Mr. Mountfort that the Report of the Special Committee be received and its contents communicated to the parties concerned. Further, that the Committee be thanked for their efforts in this matter.

On the motion of Mr. Hurst Seager, seconded by Mr. Crichton, it was decided to refer the point as to whether a fixed salary can be termed a "retaining fee" to the Executive Committee to consider and advise for future guidance.

CORRESPONDENCE: **1. Arrears.** Two letters were received from members in arrear with their subscriptions, asking for the consideration of the Council by reason of the fact that they had at present little or no practice, and were unable to pay their dues. Both these cases being reported upon favourably it was resolved that the subscriptions of these members be permitted to remain in abeyance until such time as the members concerned are in a position to pay them.

2. Public Works Department re Competition. A letter was read from the Under Secretary Public Works Department declining the Institute's request to hold a competition for the new Dunedin Post Office. On the motion of Mr. Hurst Seager, seconded by Mr. Crichton it was resolved,—

"That this Council expresses its regret that "the Government has not seen its way to "carry out an agreement made some time ago "that all public buildings likely to cost "£10,000 and over should be open for Compe- "tition amongst Registered Architects."

It was further decided on the motion of Mr. Crichton that this resolution should be embodied in a letter to the Prime Minister.

3. N.Z. Shipping Co., re Competition. A letter was received from the N.Z. Shipping Company, Wellington, declining a competition under the Institute's Regulations for its new building, and thanking the President for his services. The President explained how he had left the matter, and that he had every reason to believe that a successful competition would have resulted. As it appeared that some misunderstanding has subsequently occurred to cause the Shipping Company to retire from the position it had apparently taken up, Mr. Crichton moved, Mr. Hurst Seager seconded and it was resolved,—

"That the matter of this letter be referred to "the Committee of Practice and Discipline "for enquiry and report."

4. Wellington Fire Underwriters' Association. A letter was read from the Wellington Fire Underwriters' Association enclosing a report upon causes of fires, and in this report it was made to appear that fire was caused by woodwork coming in contact with the circulating pipes of a hot water system. Members ridiculed this idea and held that where fires had occurred from defects in the circulatory system it was, in their opinion, almost invariably caused by defective brickwork permitting sparks from the furnace to come in contact with the felt packing with which pipes were sometimes surrounded; and that the remedy lay in better brickwork and in packing pipes with some asbestos material instead of the usual inflammable material. The letter was referred to the Executive Committee to frame and forward a suitable reply.

5. Applications. A group of three letters was read from practitioners seeking entry to this Institute and the Secretary read the reply he had sent in each case; which was briefly to the effect that no practitioner could now obtain admission to the Institute as the time limit for such applications had expired in November 1914, but that if he entered by examination prior to December 1917 he could proceed direct to the final examination without taking either the preliminary or intermediate. On a discussion taking place as to the position it was decided to exercise the powers conferred by Regulation No. 154, and set up a special examination to be held in 1917 only, to meet such cases as these now before the Council. It was therefore resolved on the motion of Mr. Hurst Seager, seconded by Mr. Lawrence,—

"That it be an instruction to the incoming "Committee of Architectural Education to

"at once frame a suitable syllabus for such "special examination or examinations to be "held as may be required during the year "1917."

The action of the Secretary in replying to the above letters was confirmed.

6. Registered Architects. A letter was read from the Deputy Chief Health Officer re the use of the term "Registered Architects" by an Architectural firm, one of whose members was not registered. The Secretary explained that he had written to the firm in question pointing out the irregularity and stating that if the non-registered member was to be admitted as a member of the firm, application for permission would have to be made to the Council. Our regulations permit partnerships between members of allied professions but such members must not be included in the term "Registered Architect." The senior partner of the firm in question wrote an explanatory letter and expressed regret for the misdescription which he claimed was unintentional. On the motion of the President it was resolved, —

"That the action of the Secretary be ap- "proved, and the explanation of the member "in question be accepted as satisfactory."

8. Regulations for Architectural Competitions. The Canterbury District Branch wrote suggesting an amendment to Clause 7 of the Institute's Regulations for Architectural Competitions. The suggested amendment was ordered to be filed for future reference when considering amendments to the Regulations.

9. Mr. Charlesworth. Mr. Lawrence drew attention to the fact that Mr. Charlesworth, a Wellington Councillor, was absent through serious illness, and it was therefore resolved on his motion, seconded by Mr. Chatfield,—

"That this Council much regrets to learn of "Mr. Charlesworth's indisposition and hopes "that he will speedily be restored to complete "health."

10. Complaints. Complaints as to breaches of the regulations were received from different members, and these complaints were referred to the Committee of Practice and Discipline for enquiry and report.

It was resolved that it be a general direction to the Secretary to refer all complaints direct to the Committee concerned, without waiting for direction of Council, so that the Committee may prepare the case for report to the Council,

Re Pupil. Mr. Wales asked for a ruling of the Council on the following matter:—A pupil who is in the service of a member in Dunedin, and has approximately 18 months more of his service to run. Can he be admitted a member of the Institute being of the age of 23 and having served three years and over as an apprentice? The Council ruled that Section 8, Sub-section F, of the Act governed this case, whereby any person over the age of 21 years who had served three years' apprenticeship and who satisfied the Council of due diligence during that time had an absolute right to be admitted; and it would appear that provided the pupil's application was in order it could be dealt with at the next meeting of the Council.

NEW MEMBERS: The following new members were then admitted, their papers being in order:—

Mr. A. B. Miller, recommended by Mr. Chilwell and others.

Mr. K. T. Cowan, recommended by Mr. Mullions and others.

Mr. C. A. James, recommended by Mr. Lawrence and others.

Mr. Gordon Reed, recommended by Mr. Waldon and others.

As all these new members are already serving with various reinforcements or are now in camp their subscriptions will remain in abeyance until they return to civil life. They were all admitted under Section 8 (1) (h) of the Act.

The Council here adjourned for lunch until 2.30 p.m.

GENERAL: **1. Members on Active Service.** On the motion of Mr. C. A. Lawrence it was decided, where possible, to send the Season's Greetings from the Council to every member on Active Service.

2. Re Code of Ethics, Section 5. Mr. Crichton drew the attention of the Council to what appeared to be a breach of the Code of Ethics on the part of a Wellington firm. On the motion of Mr. Hurst Seager, Mr Crichton was asked to lay the details of the case before the Committee of Practice and Discipline.

3. Re Journal. Mr. Roberts raised a question as to an improvement in the method of showing Plans in "Progress." It was finally decided that it be a recommendation to the Editor to endeavour to arrange for larger scale plans to be shown where possible.

4. Re Moieties. Mr. Roberts raised the question of the payment of the moieties of subscription to the Branches. The present rule is that no moieties are payable until all subscriptions due have been paid. As this rule is found to be inoperative a practice has arisen of paying over the moieties at the last possible moment after it is found that no further subscriptions can be collected within the financial period. It was therefore resolved that the question of paying the moieties quarterly or half-yearly, as may be most convenient, be referred to the Finance Committee for consideration and action.

5. Fees. A firm in Auckland asked the guidance of the Council on a question of charges for supervision of extensive and continuous work for regular clients, for inspecting and passing plans, making visits of supervision, more especially in the case of buildings to the design of other Registered Architects.

Mr. Crichton moved, Mr. Hurst Seager seconded, and it was resolved,—

That it be suggested to this firm, in reply to "their letter of the 10th November, that the "expenditure in the estate quoted by them be "treated as one sum and that charges for "valuations, inspections, etc., be made by "special arrangement as laid down in the last "sentence of Clause 22 of Appendix "K."

6. Subscriptions in Arrears. The list of arrears of subscriptions submitted by the Secretary was then gone into in detail. In certain cases the subscriptions were ordered to be held over; in others to be written off, and others to be sued for payment.

ELECTION OF COUNCIL: The Secretary reported that as only a sufficient number of nominations had been received to fill the vacancies there would be no necessity for any election. The President therefore proceeded to declare the New Council to be as follows:—

Under Section 13. 1 (b). All the Past Presidents of the Institute.

Under Section 13. 1 (c). The following as Vice-Presidents:—Messrs Allsop (Auckland), Lawrence (Wellington), Clarkson (Canterbury), Gough (Otago), and Brodrick (Southland).

Under Section 13. 1 (d). Messrs Cumming, Hunter and Warren (Auckland), Messrs Crichton, Dawson and Fielding (Wellington), Messrs Hurst Seager, Hart and Collins (Canterbury), Messrs Walden and Mandeno (Otago), Mr. C. H. Roberts (Southland), together with the Honorary Secretary and the Honorary Treasurer to be elected by the new Council.

PRESIDENT'S ADDRESS: The President then addressed the Council as follows,—

Gentlemen,—

Before I vacate the Presidential Chair to which you did me the honour to elect me in December last, I wish to briefly address you.

During the year the work of the Council has been more important than extensive, the principal matters engaging attention being the conduct of Competitions and alleged breaches of our Code of Ethics.

The failure to secure satisfactory conditions of competition for the New State Fire Insurance Buildings is to be regretted as also is the refusal of the Minister for Public Works to submit the Designs for the new Dunedin Post Office to competition amongst registered architects. These failures should not, however, discourage us in our efforts to secure the object aimed at, i.e., that the Government shall submit to competition among registered architects the designs for all public buildings estimated to cost £10,000 and upwards. We should miss no opportunity to urge this matter so that we may attain ultimate success.

Though the recent conference re a competition for the N.Z. Shipping Company's new premises has not resulted as we would wish, the fact of the Institute being consulted is a step forward.

The loyal adherence both of assessor and competitor to the ruling of the Council in the matter of the Cathedral Square Competition is a matter of congratulation as is also the Health Department's communication re Registered Architects.

As my immediate predecessor very forcibly pointed out in his address last year the need of members abiding loyally by the Rules, Regulations, and Code of Ethics cannot be over emphasised, not only for the immediate benefit of those now engaged in practice but to set a standard for those who will follow. The members must realise that there is now a "Court of Appeal" against infringements of our Code of Ethics. The finding of the Committee in the case of "West v. Jorgenson" and the investigations in re the Hood" case supplies an assurance to members that the Council will give a full hearing and impartial judgment on matters submitted to it. It is hoped, however, that members themselves will see that there is no cause for complaints to be made.

From a perusal of the reports of the various Branches it is evident that with a slight exception the year's work has been more of a routine or business character rather than the advancement of professional matters. While it must be acknowledged that the first is essential to the proper conduct of affairs I would take this opportunity of recommending that the Branch Committees should deal with routine matters and thus leave more time at the disposal of General Meetings for the reading of professional papers and the discussions thereon.

Thanks to the efforts of its founders the Institute may now be considered as being out of its swadling clothes. The year has of necessity been an expensive one and it is confidently hoped that as many of those expenses will be non-recurring more funds will be available for developing the usefulness and influence of the Institute, advancing the status of members, and the raising of our profession to the highest possible plane. This of course, depends on each individual member, therefore let each realise his own responsibility and as a natural result the Institute will progress towards the attainment of those high ideals laid down in our constitution.

The lamentable war in which the Empire is now engaged has had the effect of curtailing building operations to a very large extent and our members have suffered accordingly, but as we are so far removed from the scene of active operations we have fortunately not been affected to such an extent as our brethren in the Home Land where the war has reduced to serious straits over 1,400 architects. As many of these were unfit for Active Service, and the position was becoming serious, The Royal Institute took the matter up with the Government with a result that over 400 have been engaged on Civic Surveys and other work, while over 1,000 are being employed in munition or other useful work. Happily no such need has arisen here, not even the necessity for the Government availing themselves of the honorary services tendered by the members at the beginning of the war.

Over 15 per cent. of Fellows and Associates of the R.I.B.A. are at the Front whilst here, amongst what might fairly be termed a more vigorous people, barely 11 per cent. of our Fellows and Associates have volunteered. It would seem to be a question if all our eligible members are doing their duty, have they any justification for holding back? Should not our profession be more largely represented? I leave these questions for each individual member to answer.

I cannot conclude without expressing my sincere thanks to the members of Council all of whom have so willingly assisted me in the conduct of the business, and also to our indefatiguable Secretary Mr. Beauchamp-Platts. They have all assisted in making my term of office a pleasant one the memory of which I shall long cherish. I sincerely hope that my successor will relinquish office with similar feelings and, in addition, that it may fall to his lot to announce the close of the war and the restoration of peace upon earth and good-will to all men.

On the motion of Mr. Chatfield the President was accorded a hearty vote of thanks and congratulations upon his address.

The meeting then terminated.

Builders' Conference in Wellington

The annual meeting of the N.Z. Federated Builders' and Contractors' Association was held in Wellington in November. The following officers and delegates were present:—President, Mr. N. Meuli; vice-president, Mr. J. H. Maynard; executive committee, Messrs. W. H. Bennett, W. L. Thompson, A. M. Wilson, H. Mainland; treasurer, Mr. P. C. Watt; secretary, Mr. W. A. Grenfell; representatives, Messrs. G. Baildon and W. Ball (Auckland), J. H. Maynard and W. H. Winson (Canterbury), J. D. Hamilton and J. Knox (Dunedin), H. W. Campbell (Hawke's Bay), F. Needham (Manawatu), M. Frain (Southland), E. Walpole (Wanganui), H. Mainland, W. L. Thompson, and A. M. Wilson (Gisborne).

The delegates were welcomed by the president of the Federation and by the president of the Wellington Builders' and Contractors' Association (Mr. H. Mainland).

The Annual Report was presented by the president and read as follows:—

In again presenting a report of the work of the Federation your Executive feels that delegates join with it in deploring the continuance of the dreadful warfare in Europe. The people of the Dominion feel its overshadowing influence and daily anxiety exists lest disaster come to our cause or lest they be bereft of dear ones. Very many members of the affiliated Unions have sons or relatives in the ranks of our brave soldiers, while a goodly number of master builders have laid aside their ordinary work and have given themselves to assist in fighting the country's and the world's enemies. Of the many brave deeds of the New Zealand forces and of the manner in which they have kept clean the fair name of the Dominion the people are naturally proud.

The effect of the war upon the building trade is, in common with other trades, being seriously felt. Only necessary work is being carried out and the natural business expansion of normal times has ceased. Owners and capitalists are cautious in their investments. A large number of the best workers have volunteered for active service, thus creating a shortage of competent journeymen, resulting in the necessary employment of less capable men and the consequent lowering of the standard of work performed. As to building materials, prices have increased beyond conception, importations have been curtailed and many classes of goods are now unprocurable.

In matters legislative, it is recognised that the time of ministers and departments is fully occupied in directing the abnormal business of the state, brought about by and in consequence of the war, and your committee has therefore deemed it advisable and fair to withhold making representations to the Government on a number of questions that it is desired should receive consideration. Amongst these questions are (*a*) The duty on foreign timber, (*b*) The differential railway rates on imported timber, (*c*) Amendment of the Industrial Conciliation and Arbitration Act to better ensure that all employers of labour are bound by trade awards, (*d*) Amendment of the Arbitration Act so as to provide that when arbitrators are unable to agree upon an umpire it shall be the duty of a local magistrate having jurisdiction in the district in which the dispute has arisen to name an umpire. These matters will be dealt with by your executive as soon as circumstances are favourable for the making of representations.

ADVISORY OFFICER.

That the enthusiasm and energy shown by our good president in endeavouring to secure the agreement and support of all centres to his proposal for appointing an organiser for the Federation has so far been unfruitful, is much regretted by your committee. The war is unfortunately largely the cause of the scheme not having been adopted by all centres, although it is fair to record that the majority of them gave their support to the President's proposals. The question is one that will undoubtedly be again discussed and in connection with it, it should be marked and noted by delegates, and centres should take warning of the fact that workers unions are appointing Dominion organisers who will be visiting the various centres, doubtless for the purpose of building up their unions and rendering them expert assistance in connection with trade disputes.

LEGAL.

Your Executive recognises that one of its important functions is to watch the progress of legal cases of interest to the trade. It was therefore decided, after consulting the centres, to secure the best available counsel to argue the builders' cause in a recent appeal in Wellington, in which a business firm sought to recover from a firm of contractors the full value of goods supplied on the order of the employer, although the contractor had been allowed and paid by the employer a less sum than that claimed. The original contract for the building stipulated the P.C. sum of £230—for furnishings, but the architect authorised payment of only £164 odd to cover the furnishings account. Although the contractors had not received more than that sum, which they were all along prepared to pay, the local magistrate gave judgment against them for the full amount claimed. The appeal was against this judgment and resulted in the case being decided in favour of the contractors. The full Supreme court judgment will be printed in the report of conference proceedings.

An Auckland case involving a ruling of the Supreme Court on the question of finality of an Architect's certificate has been partly heard. Mr. Justice Cooper has decided that an Architect's certificate is not final

and that the decision of the Architect is open to revision by arbitration.

DUTY ON TIMBER.

Credit is due to the Hawke's Bay Master Builders' Association for the active and proper steps taken by it to bring about a review by Government of the direct and indirect duty imposed on imported timber. In furtherance of the steps taken by Hawke's Bay your Executive waited upon the Minister of Railways (Hon. W. H. Herries) for the purpose of requesting that the differential railway charges on imported timbers should be removed. In support of the request it was stated by Mr. Bennett (Chairman of Executive) that the values of timbers imported last year were:—

United States: Oregon £45,199; other timber £25,784; Australian logs hewn, ironbark £57,532; jarrah £34,588; other timber £16,525; logs round, ironbark £20,337; palings split £5,113; timber sawn n.o.e. ironbark £19,445; jarrah £108,170; other timber £46,163; total imports £379,856.

The value of the total imports for 1914 was £404,582. Not only was an import duty payable to the Customs but a further restriction was imposed by the railway charge of rate and a half. While New Zealand timber gives approximately 450 super. feet to the ton, hardwood only gives 320 super. feet to the ton. These timbers were therefore penalized to the extent of the extra half freight and also with the extra weight, so that it became very expensive to take any foreign timber from a seaport to the interior. With respect to Oregon timber it gave 700 super. feet to the ton.

It was further pointed out that the end of New Zealand timber was practically in sight, supplies are rapidly coming to an end, and Master Builders are becoming anxious as to the future.

The free importation of foreign timbers would assist in conserving local supplies and it would be wise policy on the part of the Government to encourage importations. Local timbers hitherto used for bridge building and works connected with water or immediate contact with the earth were fast disappearing. Jarrah and hardwood were now taking the place of totara. For certain purposes the importation of oregon was becoming a necessity. If oregon did partly supplant local timbers it would be a good thing for the Dominion, as it would lengthen the life of local supplies. As to undue competition with the sawmilling industry, it is sufficiently protected by the heavy sea-freights.

The Minister in replying said the matter had been brought before his notice several times. The hardwood did not complete so directly with our own timber as the Oregon. Hardwood in many cases was included in Government specifications, but he had heard very little in favour of Oregon as compared with our own timber, except that it could be got in longer lengths. As to the general principle, he thought it could be safely conceded that any protection of native industries should be done through the Customs and not by the railway, but when the question arose there were objections to bringing in a Customs Bill, and the method was adopted of putting on the protection by means of a railway tariff. He hoped that the next time the Customs Bill was brought in the whole question would be considered. He did not know that he could hold out any hope of any alteration while the war is on. He would like to give some relaxation with regard to hardwood, but in war time they did not want to drop any source of revenue that they could hold on to. If a Customs Bill was brought in he would put the matter before Cabinet.

In reply to the request of your executive to the Minister of Customs (Hon. A. M. Myers) to be afforded an opportunity of interviewing him on the question of Customs duty on imported timbers, the Minister intimated his readiness to meet your Executive, but he pointed out that it would be useless asking him to open, during the war period, the whole of the Customs tariff in order to review this one question. Under the circumstances your executive deemed it advisable to hold its hands until there was some immediate prospect of reform.

LABOUR TROUBLES.

The New Zealand Executive Board of the Amalgamated Society of Carpenters and Joiners approached your Executive with a request that a conference be held in Christchurch for the purpose of considering terms for a new Dominion Carpenters' award. After consulting the centres, your Executive replied that as the awards do not expire until the 16th December of this year and as the Master Builders will meet in conference before that date it has been decided that delegates should not be appointed to confer with the Amalgamated Society.

The Wellington District Council of the same Amalgamated Society also proffered a request that the Master Builders should meet it in pronouncement of the of giving effect to the pronouncement of the Arbitration Court re granting a war bonus to all employees." This request arose, no doubt, from a misunderstanding of the true intent and meaning of the statement of the Arbitration Court made in Wanganui when announcing its decision in the Auckland Labourers Dispute. As other Unions have either deliberately or in error placed a wrong interpretation upon the Court's judgment, it is advisable Master Builders should learn the true intent and extent of the Court's pronouncement. This will be readily gathered from the following extracts from the Court's memorandum. (Book of Awards Vol. XVII. page 137):—

> "Without committing itself to any definite opinion on the subject, as the circumstances of each particular industry and the effects of the war upon it, prejudicial or beneficial, as the case may be, must necessarily be a determining factor in the matter, the Court suggests that employers generally might well consider whether workers in their employ should not be granted a war bonus on the same lines as that contained in this award (10 per cent. bonus upon the minimum wage). It appears to the Court that in order to provide workers under present conditions with a reasonable living wage they should be paid at least 1/3 per hour in the case of hourly wages, and at least £2/12/- per week in the case of weekly servants."

Your Executive's reply to the Wellington District Council was to the effect that after full consideration of all phases of the matter the Executive regretted it could not recommend the trade to pay a war bonus. It was pointed out that at the time the last increase was given to the Carpenters it was considered by

employers that the fixing of wages at 1/6 per hour would prove a settlement of the wages question for some years. The executive expressed the opinion that Trade Unions were apparently reading into the pronouncement of the Arbitration Court much more than was intended by the Court and the Amalgamated Society was reminded that the Court in making its statement respecting a war bonus was dealing primarily with the wages of labourers and the lower grade workers, not those of the general body of workers.

EMPLOYERS REPRESENTATIVE ON ARBITRATION COURT.

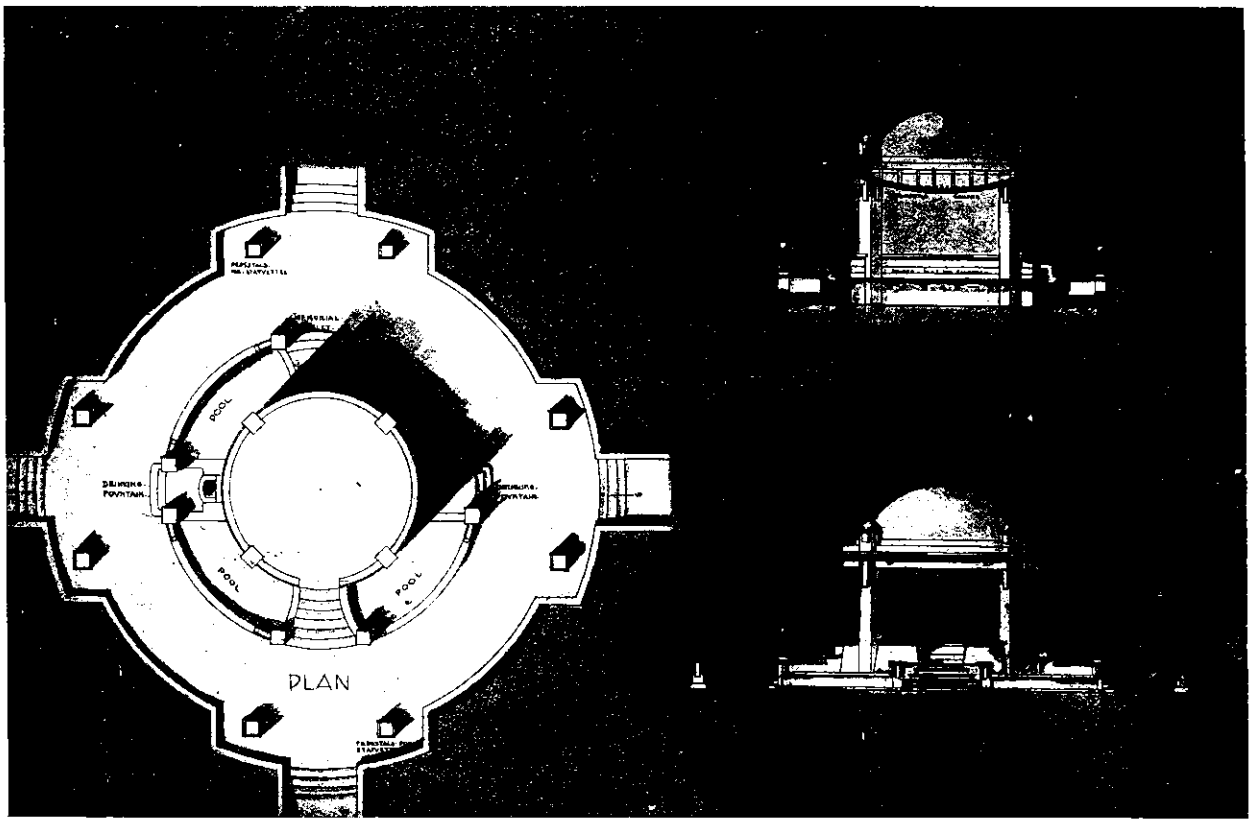
The selection of a fitting representative to fill this most important position for the ensuing three years has shortly to be made. As members are doubtless aware, the re-appointment of Mr. William Scott to the position was for the balance of the existing term which expires this year. It is believed Mr. Scott is willing to again accept nomination and as he has been recommended by the annual meeting of the New Zealand Employers Federation for nomination and as he has since his return to the Court, shown in a marked way how valuable his services are to employers, your executive strongly recommends his selection by affiliated Unions.

APPRENTICES.

The very important present day problems respecting the training and employment of apprentices call for the most serious consideration of all employers. In the near future the fair treatment of apprentices who have been on active service will have to be weighed and dealt with, and the proper training of youths to give a necessary supply of skilled workers in the future demands the closest attention of Master Builders.

OBITUARY.

Your executive with sorrow records the death of Mr. K. F. England of Christchurch who for many years took a prominent part in the doings of the Federation and who for his sterling character and native worth was held in the highest esteem by all who knew him .



Winning design in our 49th Competition, "Baksheesh," by Mr. H. L. White, with Mr. W. G. Bush, City Engineer's Office, Auckland.

Our 49th Competition

For Band Rotunda

This competition brought five drawings, viz.:—"Lute," by Richard Osten, with Messrs Anscombe and Smith of Invercargill; "Cornet," by R. A. Patterson, C/o. Government Architect's Office, Wellington; "Baksheesh," by Harold L. White, C/o. City Engineer's Office, Auckland; "Melody," by Henry C. Critchfield, with Messrs Anscombe and Smith of

Invercargill; "Stone," by Nigel Wallnutt, with Messrs E. Mahoney and Son of Auckland.

Mr. Leslie Coombs, A.R.I.B.A., of Dunedin who kindly set this subject reports as follows:—

"Baksheesh," (placed 1st)—This is the most original and best thought-out conception submitted in the competition. The design, however, is much more suitable for ferro-concrete than for masonry construction, and the four supports would be apparently inadequate to carry the superstructure.

"Lute"—This design is very good, but is spoilt by inferior draughtsmanship. Coupling the columns makes the fault of wide intercolumniation less apparent than it otherwise would be.

"Cornet"—Another good design, but lacking in vigour and originality. A perfectly flat ceiling level with the bottom of the architrave would be preferable to the sound-catching coffers shown.

"Stone"—The entablature and base to the dome is much too heavy. The scheme as a whole is commendably simple and restrained, but practically every feature has minor faults.

"Melody"—The object of stating in the conditions that the designs were to be inked in and shaded with diluted Indian ink was to produce a uniform set of drawings which could be easily compared. "Melody" in making his drawings with reddish brown ink (perhaps it is "Red Indian" ink) distinctly violates the conditions, and, accordingly, must be corrected. The design has original features which, if well carried out, would be effective.

LESLIE D. COOMBS.

Theatre Fire Escapes

Interesting case in Auckland

An appeal by the Gaiety Theatre, Ltd., proprietors of Everybody's Theatre, against the decision of the superintendent of the Fire Board, in refusing a certificate as to the means of escape in case of fire, was heard by Mr. F. V. Frazer, S.M., recently, reports the Auckland "Herald." Mr. H. H. Ostler, instructed by Mr. G. E. L. Alderton, appeared for the appellant and Dr. H. D. Bamford, instructed by Messrs Earl and Kent, for the superintendent.

In opening the case for the appellant company, counsel said the onus was on him to prove that there were sufficient safeguards in case of accident.

Ashley Hunter, civil engineer and architect, said he had inspected the theatre. In addition to the main exit there were two exits into Fort Street. The theatre was practically fireproof, the floors being the only combustible material in it. Using one exit the theatre could be emptied in five or six minutes, and using the three exits it could be emptied in three minutes. Witness based his calculations on the assumption that the rate of progress was one mile an hour. With regard to the stairs entering the vestibule at right angles witness said the same conditions occurred in nearly every other theatre. Witness could not, however, see the slightest danger from this, in view of the size of the exits and the limited seating accommodation. Witness did not think the tea-rooms would cause any obstruction. He considered the theatre one of the safest in Auckland.

To Dr. Bamford: His calculations were mathematical, and he had not allowed for the human element. He considered the New Zealand public was not prone to panic. He did not think the removal of the tea-room would minimise a panic.

Evidence was given by George Selwyn Goldsboro', architect; George Wilfred Allsop, president of the Auckland branch of the New Zealand Institute of Architects; William Arthur Cumming, president of the New Zealand Institute of Architects; and Norman Wade, architect, to the effect that they considered the theatre was adequately safeguarded.

Walter Parry, manager of the Victoria Insurance Company, said he was willing to quote the lowest rate for a public risk policy for the theatre.

Superintendent C. A. Wooley, of the Auckland Fire Brigade, said he had inspected the building. When it was first built—before the tea-rooms were started—he regarded the open space as a place of safety, as the whole audience could congregate there. He considered the erection of the balustrade was a source of danger in the event of a panic. The slightest pressure on anybody passing would send them over the balustrade. He also objected to the people coming downstairs meeting at right angles those coming from the ground floor. Emergency exits were not of much use, as people generally went out the same way as they entered. Witness considered no one could say how long it would take to leave a theatre in the case of a fire, as people were apt to lose their heads.

At this stage Mr. Ostler asked if the superintendent would be satisfied if the balustrade of the tea-rooms was raised and the level of the back exits altered. Mr. Wooley replied in the affirmative, and the matter was then adjourned for a fortnight for the work to be done.

Federal Capital Competition Postponed

This competition, which was announced before the war, and abandoned owing to it, was afterwards advertised open again for competitive designs which had to be in by June 31st, 1917. We now learn that owing to a change in the Federal Cabinet by which Mr. O'Malley was removed from office and Mr. Bamford appointed in his stead, that the competition for the Federal city of Canberra has again been postponed.

It is undoubtedly fairer that architects on active service should have a chance to compete in this world-advertised competition, but what must the world think of an administration that wobbles in its policy as the Federal Government is doing over this matter? It makes one tremble for the fate of Canberra. Australia has a unique opportunity to make a name for itself if it honestly sets about the solution of the great problems entailed in the erection of its new capital city. The world is watching Australia, and Canberra, if properly worked out will undoubtedly become a great "draw" to all interested in the growth of great cities. Will she seize her opportunity?

Notes

'L'Humanité,' the well-known French newspaper, contains, in a recent issue, a long article on the reconstruction of the destroyed French cities, and what is possible to be done. The burden of the article is a strong plea for the adoption of the whole of the garden city principle in the national rebuilding which will take place after the war, not only as regards the lay-out plan or the town-planning portion, but also in regard to the financial policy. At the end of the article, after reproducing and emphasizing the arguments for garden cities, the author says: "The reconstructed cities must no longer be a wretched mass of dirty dwellings, sad and insanitary, and of houses of ill-fame, but of a varied succession of garden cities of from 30,000 to 35,000 inhabitants, each one clean, happy, healthy, at the same time agricultural and industrial and almost autonomous, respecting the liberty of the individual and assuring to him at the lowest price the maximum of comfort. To that end every town, even the industrial towns, must be surrounded for ever by a belt of agriculture and park land. In that way the central portion of the area will form the town proper, while the rural part, which must be the greater, will provide farms and small holdings, which will allow the cultivators of the soil to have at hand all the facilities for their calling."

Our 52nd Competition—*Continued*

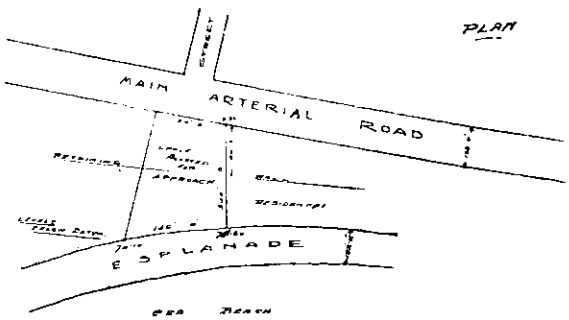
Designs must be sent in, in black and white under a nom-de-plume, addressed to **Progress**, 8 Farish Street, Wellington, and marked clearly "Fifty-second Prize Competition" on outside with a covering letter giving competitor's name, and address of employer. Designs to be sent in by March 21st, 1917.

Our 53rd Competition

We offer a prize of £1 1s. 0d. for the design adjudged the best for an

Improvement Scheme for a Seaside Town

in accordance with the following conditions:—



The levels of the Main arterial road and the esplanade are shewn on the plan: It is suggested that the space allotted to the approach be laid out as a public reserve with easy approach to esplanade. It is left entirely to the competitor whether the approach is by means of steps or an incline, or a combination of the foregoing; it is not suggested that the approach be for vehicular traffic.

Drawings to be executed in black and white or monochrome, and to comprise lay-out plan, section, and elevation of Esplanade. Scale 1/16-in. Birds-eye view is optional.

Messrs Chilwell and Trevithick of Auckland have kindly set this subject.

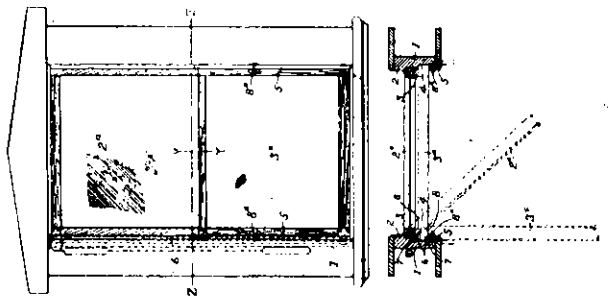
Designs must be sent in, finished as above, under a nom-de-plume, addressed to **Progress**, 8 Farish Street, Wellington, and marked clearly "Fifty-third Prize Competition" on outside with a covering letter giving competitor's name, and address of employer. Designs to be sent in by May 21st, 1917.

Conditions of "Progress" Competitions

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

Recent Building Patents

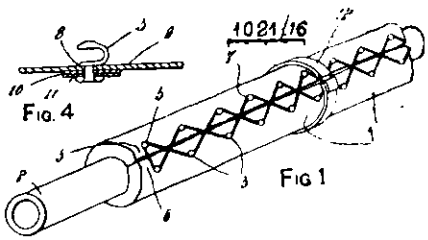
Window Construction.—A patent, No. 37,824, has been taken out by Julia Hannah Crook and John E. Crook, both of Remuera, Auckland. It consists in hinging each sash at one side of the window (preferably the left hand), the hinges employed being of a special construction and having formed on their inner ends runners adapted to be slid upwards and downwards in vertical guides recessed into the window-style. The styles on both sides of the windows are specially formed, so as to avoid the necessity of employing separate outer stops and parting-slips, while the inner stops are hinged to open inwards. When weights are employed they are provided at the hinged side only of the window and operate in the usual manner. The means for raising and lowering and locking the sashes when weights are not used do not in any way interfere with the hinging of the sashes. Said means consist of two screwed rods recessed



into the style on the same side of the window as the hinges and extending the full length of the frame. In this case the hinges, of which there are preferably two to each sash, have formed at their inner ends sockets or bosses screwed internally to work on the screwed rods, the hinges of the upper sash being mounted on the rear rod, and the hinges of the lower sash on the front rod. By means of a crank-handle mounted through the inner facing, and toothed gearing between said crank-handle spindle and the screwed rods, either of the latter can be revolved as required to force the hinges carrying the sash upwards or downwards. Casement windows are hung from the window-frame by means of double-knuckled hinges secured to the outside of the top and bottom bars of each sash. The sashes swing outwards in the ordinary way on the first or usual knuckles, and when it is desired to get at the outside of the window, same can be reversed on the second knuckles, which are situated about midway of the top and bottom bars, the hinges not being permanently fastened to the bars, between the knuckles.

Pipe Lagging.—A patent, No. 1,021, has been taken out by Mr. Bertwistle and E. Jones of New Zealand.

To fasten heat-insulating material on steam pipes, &c., studs or hooks *3* are riveted along the edges of the material, which is then secured by lacing.



The circumferential joints on small pipes are covered by straps *12*, while on large cylindrical surfaces these joints may be laced.

Fibrous Plaster Sheets.—A patent, No. 18,116, has been taken out by A. C. White of South Australia for treating fibrous plaster sheets.

To glaze the surface and render the sheets pliant for fixing, dextrine or casein, cream of tartar, borax, and alum are dissolved in water and added to the plastic plaster of paris.

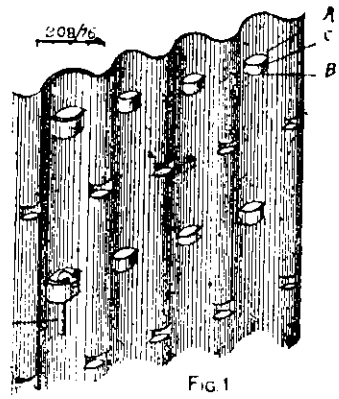
The face and back gauges are mixed separately; the former consists of 15-lbs. of plaster of paris to 9 pints of water, the latter to be of somewhat thicker consistency.

2-lbs. of dextrine, 1½-ozs. of cream of tartar, and ½-oz. each of borax and alum are dissolved in a gallon of boiling water, and 2 to 2½-ozs. of the solution is added to the plaster for the face gauge, 5½-ozs. being used for the back gauge. When one gauge only is required 8-ozs. are used to 66-lbs. of plaster and 37 pints of water.

The sheets are formed upon a smooth or moulded surface and backed with flexible material comprising flax and hessian, and the back gauge is then applied.

No drawing, 7 claims.

Metal Reinforcement.—A patent, No. 208, has been taken out in New South Wales by J. Day for Metal Reinforcement. To form a support for concrete or plaster work double transverse slits are made across the ridges and furrows of corrugated iron sheets, and the strips thus formed are bent outwards to act as keys.



Pins *D* may be passed through the strips to lock the overlapping edges of two sheets together. The slits may be made along the corrugations, when the outwardly bent tongue on one sheet will interlock with the slots in the edge corrugation of the other sheet.

Septic Tank.—A patent, No. 781 has been taken out by S. Somen and J. W. Taylor of New South Wales for a septic tank in which the sewage flows into a disintegrating chamber and then is distributed through perforated pipes over a filter-bed.

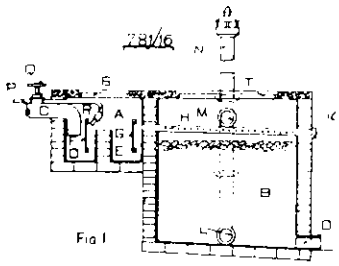


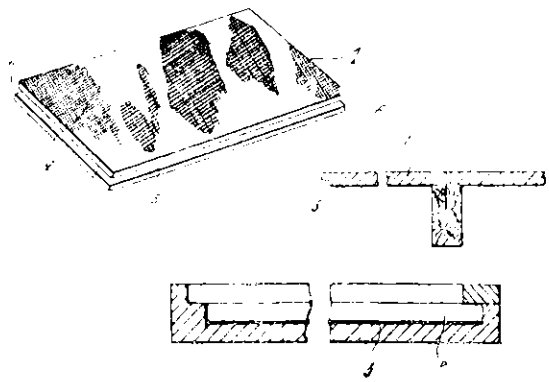
Fig 1

The sewage upon entering the chamber *A* meets the baffles *F* and *G* and is broken up and dissolved. It then flows through the perforated pipes *H* on to the filter-bed *B* composed of broken bricks or coke, &c., from which the clear filtrate drains away through the outlet *O*.

The baffles *F* and *G* have a series of flushing nozzles *R* controlled by the valve *Q*, and the perforated pipes *H* have cleaning caps *K*.

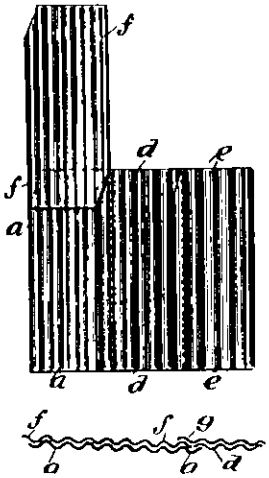
Building Slabs.—A patent, No. 37,759, has been taken out by Daniel Jas. Knight, of Pehi Street, Wanganui for a building slab.

According to this invention, the slab is composed of a mixture of soft lne sand, cement, and pulped paper mixed in suitable proportions with water, and reinforced with ox-hair, tow, or any other preferred reinforcing means. Coke-breeze may, if desired, be used to take the place of sand, and in this respect is an equivalent thereto. One side of the slab is provided with a specially formed roughened surface in order to form a key for plaster, while the opposite side is smooth in order to present a surface that can be papered or treated in any desired manner. The ingredients are moulded into the required size and shape in suitable moulds. The roughened surface on one side of the



slab is obtained by the shape of the bottom of the mould, while the other side is preferably made smooth. The preferred manner of making the roughened surface is by the employment, in the bottom of the mould, of a layer of scrim. Into this mould the mixture in the desired proportions is placed, and the upper surface rendered smooth in the ordinary manner. Upon the removal of the slabs from the mould the scrim is easily taken from the slab, leaving a roughened surface which forms an excellent key for plaster.

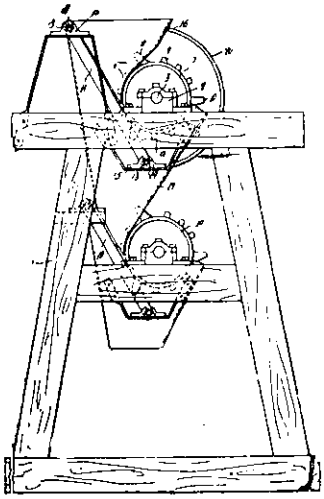
Roofs, Walls and Covering with Overlapping Sheets.—A patent No. 37,798, has been taken out by Albert A. Buss of Manchester, England which consists in fixing each sheet of the first course with one of its sides overlapping and its



top cut corner lying on the adjacent sheet, and in fixing each sheet of the successive course with its lower end overlapping the sheet below it and its bottom cut corner lying opposite to and in the same plane as the top cut corner of the sheet adjacent to the sheet below it. [4 figures, 3 claims.]

Pumice Crusher.—A patent, No. 38,003, for a pumice crusher has been taken out by Messrs Collett and Son Ltd., of Dannevirke.

The invention comprises rollers made up of disks having teeth of varying size and operating in front of a sloping grid. The shorter teeth take off pieces from the pumice or



other stones, and the longer teeth force the detached pieces through the grid. A second and finer roller and grid are provided below the first roller and grid for the purpose of still further reducing the pumice or other stones.

[4 figures, 8 claims.]

Building Notes

AUCKLAND.

Mr. G. W. Allsop is inviting tenders for the erection of the new building which is to be erected on Waterloo Quadrant, next to the Magistrate's Courthouse, as offices for the Auckland Hospital and Charitable Aid Board. The plans provide for a structure in two storeys and a basement, with brick and stucco facade. On the ground floor will be a spacious public office, which, together with the vestibule,

will occupy a space of 23-ft. by 24-ft., the rear portion being devoted to the relieving officer's department, equipped with separate waiting-rooms for men and women, and accommodation for the staff. On the upper floor is to be a boardroom, 38½-ft. by 32-ft., situated at the back of the building, while the front rooms are to be occupied by the dental hospital.

A new wing has recently been added to the Art Gallery at a cost of £4,000. It was officially opened last month.

The new wing opens from the McKelvie Gallery, with a broad, shallow, flight of steps, and a fine effect has been obtained by the hanging of the striking picture "Greek Horsemen," by Frank Calderon, R.A., immediately opposite the main entrance to the gallery. The new room is 100-ft. by 33-ft., being divided by projecting double Ionic columns into three sections. The interior design enables the pictures to show up well against the subdued grey-green tinting of the walls. A new method of lighting has been adopted, the light being admitted through side-windows and diffused by a curved glass ceiling. The whole building is thoroughly fireproof, and is modelled on the design of one of the rooms in the National Gallery of New South Wales.

At a meeting of the University College Council last month, it was stated that a letter had been sent to the chancellor of the university stating that the council had been surprised to find that there was no prospect of the Council receiving an annual grant from the New Zealand Institute of Architects in connection with the proposed school of architecture. The University Senate had made two annual grants from the national endowment fund, but these would not enable the council to do more than appoint two lecturers, who probably would be practising architects. The council could not undertake to appoint a professor to devote his whole time to the subject. It was resolved that the Senate be asked to approve of the appointment of two lecturers.

Tenders for the erection of a school building at Horotiu and for a technical school at Matamata were accepted at £663 and £473 respectively at a recent meeting of the Education Board.

The middle flight of steps leading to the chief post office from Queen Street was opened to the public yesterday, following upon the improvements which have been effected. Porcelain "nosings" have been added to each step to afford a wider and surer foothold. Each step is now 12-in. wide, instead of 10½-in. The surface of each nosing is corrugated and the ridges, it is said, never become smooth or slippery. The result of the improvements effected is that people mounting the steps are able to do so with greater confidence and comfort. The other flights are to be attended to in their turn. We hope Wellington Post Office will have the same consideration as Auckland has had, the steps being almost identical and a constant source of danger.

The official opening of the Kakepuku cheese factory took place last month in the presence of a large number of settlers, the Hon. G. W. Russell, Minister for Internal Affairs declaring the factory open.

DUNEDIN.

Mr. H. Abbott, of Dunedin, has secured the tender for the erection of two fields inspectors' residences at Tapanui and Ranfurly respectively. Each building will cost about £900.

The Presbyterians of St. Helier's Bay, Dunedin, built a church on Saturday, allotting to themselves the time between sunrise and sunset to have it completed and ready for Sunday's service. It is no small feat to convert a stack of timber into a church in such a short while, and the 35 men engaged had a busy time. The church is 45-ft. by 24-ft.

The local Public Works Department has received authority to proceed with the erection of an explosives magazine on a site secured on the Wingatui side of the Chain Hills tunnel. A residence for the magazine keeper will also be constructed.

Messrs Salmond and Vanes, A.R.I.B.A., have been instructed by the City Council to proceed with the erection.

Mr. E. A. Anscombe, as reported fully in another part of this issue, has been notified by the Wanganui Borough Council that he has been appointed architect for the erection of the Sargeant Art Gallery, and has been requested to proceed at once with the preparation of contract, plans, etc. Mr. Anscombe was the successful competitor in the best design for the gallery out of 33 competitors.

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