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The South African Architectural Journal

BUILDING.

THE JOURNAL OF THE ASSOCIATION OF TRANSVAAL ARCHITECTS
AND OF THE NATAL INSTITUTE OF ARCHITECTS.

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EDITOR—
E. M. POWERS, F.R.I.B.A

ASSISTANT EDITORS—
E. H. WAUGH, A.R.I.B.A., M.S.A.
R. HOWDEN, A.R.V.I.A. F.S. ARC.

BUSINESS MANAGER—
MURRAY K. CARPENTER,
67, EXPLORATION BUILDINGS.
COMMISSIONER STREET,
P.O. BOX 2266, JOHANNESBURG.
PHONE 5821.

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The Association of Transvaal Architects.

12th Annual General Meeting.

The Twelfth Annual General Meeting of the Association was held in the Lecture Theatre of the Associated Scientific and Technical Societies of South Africa, 100, Fox Street, Johannesburg, on Saturday, 25th February, 1921, at 8 p.m.

Prior to the meeting the Retiring President entertained all the members of Council to dinner in the Club House.

At the Annual General Meeting there were present, under the chairmanship of the retiring President, Mr. Ernest M. Powers, F.R.I.B.A.: Messrs. J. S. Donaldson (President-Elect), F. L. H. Fleming, Allen Wilson, G. S. Burt-Andrews, B. R. Avery,

D. M. Burton, H. Bell John, Geo. Bromilow, N. T. Cowin, T. Gordon Ellis, R. Howden, Chas. Hosking, P. J. Hill, Gordon Leith, J. A. Moffat, Harold Porter, Professor G. E. Pearse, Messrs. C. W. Reid. D. M. Sinclair, F. Soff, H. W. Spicer, H. G. Veale, E. H. Waugh, F. Williamson, P. C. Chivers (solicitor to the Association), and M. K. Carpenter, Registrar.

A quorum being present, the President declared the Twelfth Annual General Meeting to be duly constituted.

Mr. Carpenter (Registrar) then read the Notice convening the meeting, also the Agenda.

The Minutes of the last Annual General Meeting having been published in the " Journal " were taken as read and confirmed.

The President stated that the Minutes of the Special General Meeting held on 2nd December, 1921, were published in extenso in the December number of the " Journal."

It was agreed that these Minutes should be taken as read and confirmed, Mr. Cowin seconding the proposal.

Mr. Donaldson moved the adoption of the Balance Sheet.

In discussing the Balance Sheet, Mr. Cowin commented upon the amount of outstanding subscriptions carried forward.

The President explained that the gentlemen in arrears with their subscriptions could not be located and the only means of recovery was by action at law —there being no power under the Act to wipe off any of these subscriptions.

Mr. Burt-Andrews suggested that the Council look into the matter and see if it is not possible to write off some of these amounts; also to take steps to get the necessary powers to do so under the new Act.

Mr. Waugh enquired the reason for the Auditors not signing the Benevolent Fund Account on the Balance Sheet.

The President stated that the Balance Sheet of the Benevolent Fund Account had been signed by the Auditors. In printing the Balance Sheet the signature should have been placed at the bottom instead of the space in which it was signed.

The Financial Report and Balance Sheet were thereupon confirmed.

Mr. Sinclair moved the adoption of the Council's report and Mr. Donaldson seconded the adoption.

Mr. H. Porter asked if any steps had been taken with regard to the abolition of the Professional Tax.

The President referred to the correspondence between this Association and the Administrator in that connection. The Tax being legal the Registrar had been instructed to advise members to pay the Tax by the first month so as to avoid fines. Although strong representations have been made to the Minister on this point, the Council could not carry the matter further at the present time.

Mr. Burt-Andrews said the Council took up the question of the repeal of a certain Municipal By-law in connection with the signing of plans and its relationship to the Professional Tax and the non-recognition of the profession. It seemed to him to have hit the right nail on the head. It was strange that Architects should be taxed in this way if they are not properly recognised as Architects and the Government allows any other person to practise the functions of an Architect and avoiding payment of the Tax.

The President stated when it was proposed by the Administrator that the By-law providing that plans be submitted by Architects only should be repealed, every argument was urged to prevent the By-law being rescinded, but a strong opposition was put forward by the Mining Houses with the result that the By-law referred to had been rescinded.

Mr. Waugh referred to the good work done by the Board of Examiners and regretted that they had not received any credit at all for their labours—all the other Committees had received recognition for their work, but all the credit of the Board of Examiners' work went to the Council.

The President stated that this was due to an oversight owing to the fact that there had been an omission in getting into touch with the chairman of the Board of Examiners and asking for his report, the Board of Examiners being a body outside the Council. He further stated that he quite agreed that mention of the good work done by the Board of Examiners should have been amplified more than it had been done and in the next Annual Report he would see that the matter was corrected.

Mr. Waugh: The Board may not do any work next year, it has done certain work this year and there may be less to do next year. I do not think it will quite satisfy my motion to refer to it in next year's Report —if the Council has forgotten something, it must be rectified. There is no obstacle in doing that and it would satisfy my motion.

Mr. Waugh moved that the Report be not adopted unless some reference to the work done by the Board of Examiners be included in the Minutes.

The President agreed that this omission would be rectified in the Annual Report of the Meeting.

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Mr. Cowin proposed, and Mr. Sinclair seconded, that a hearty vote of thanks be given to the Board of Examiners for their excellent work during the year. This was agreed to.

Mr. Waugh drew attention to the use of the word "Honorary" in connection with the Lecturers at the University College, pointing out that since they got paid for their services this word should be omitted.

Professor Pearse pointed out that the University Authorities looked upon these Lecturers as occupying an honorary position; the fees paid were altogether inadequate for the services rendered, it being pointed out by the Authorities to Lecturers on appointment that an honorary fee was paid for services.

Mr. Waugh again pointed out that since payment was made for the services rendered, the inclusion of the word was not in order and he therefore proposed that the Report be amended by its adoption.

This was seconded by Mr. J. S. Donaldson and agreed to.

There being no further comments, Council's Report on the work done during the year 1921 was agreed to.

Mr. Ernest M. Powers, the retiring President, thereupon delivered the following valedictory address:

It is with some hesitancy that I have selected, this evening, as my subject "Registration and Education of the Architect," but am encouraged to do so by the fact that the Statutory Qualification of Architects was perhaps the most important subject discussed at our recent conference, and also that the proposed Architects' Act to be shortly submitted to the South African Legislature is now being carefully considered in minute detail by the Committee appointed for that purpose. The question of registration, in my opinion, is so dependent upon that of education that the former cannot be dissociated from the latter. I therefore trust that my observations and criticisms may help us, in a measure, to view registration from the correct standpoint and with a broad and sympathetic outlook.

May I for a minute digress from the subject to give a simple scientific illustration. One frequently hears the expression, "the other point of view," which, I venture to say, is often erroneously used. Imagine for one moment that you desire to obtain a picture of some pleasing landscape, and having selected your point of view find that the resultant picture has not included all that you wished, you do not necessarily alter that view point, but take a wide angle lens, which includes in the picture that which you at first desired, the detail perhaps not so concentrated and sharply defined as in your first picture, but the whole result more comprehensive.

This very important subject of registration requires to be viewed through the wide angle lens of a broad sympathetic outlook not too concentrated in any particular detail, to be viewed in relation to its effect upon professional ethics, with regard to service rendered in the public interests and influence for good in architecture and architectural practice in general.

In this respect I very much doubt if the Architects' Private Act of the Transvaal in its present form, one of the last Acts promulgated by the late Transvaal Parliament would receive the sanction of Parliament to-day. None know better than ourselves its many flaws and defects and not the least of these its absolute avoidance of the subject of education or interest in the students of architecture, and yet this Act is not to be condemned altogether. It has served a very useful purpose, the very knowledge of its many flaws has been of great assistance to the Registration Committee in drafting an Act more perfect in its parts as befits this honourable profession.

The diffusion of architectural knowledge appears in a vague sort of way to have actuated the founders of architectural societies in Great Britain as far back as the early part of the Nineteenth Century, and we find that prior to the foundation of the Royal Institute of British Architects there existed in Lincoln's Inn Fields, London, a body known as the "Architectural Society," its primary objects being the advancement and diffusion of Architectural knowledge, and its ultimate aim to form a British School, Library, museum, Professorships, and to produce exhibitions, which want was beginning to be felt by students at that time.

This Society was instituted in 1831, its first President being William Bainard Clarke. Three years later the Institute was founded with Earl de Grey as first President, and a Royal Charter was granted to it by King William IV. in June, 1837, and in 1843 its alliance with the Architectural Society was effected.

The objects of the Royal Institute as recited in the Charter were the forming of an Institute for the general advancement of civic architecture and for promoting and facilitating the acquirement of the knowledge of the various arts and sciences connected therewith.

Since that time there have come into being numerous Architectural Societies both in Great Britain and the Dominions, with their respective

constitutions based upon that of the Royal Institute, most of them having a certain standard of qualification for membership, and some requiring the passing of examinations as a necessary qualification for admittance; but none of them providing any direct means of education beyond encouragement to students in the form of bursaries, scholarships, and the like.

In fact no real progress or attempt to organise a system of architectural education had been made up to twenty-five years ago, and until the foundation of the Liverpool University School in 1904, I believe there was no institution in England giving full-time organised teaching in architecture, although in France a definite scholastic method had been installed and developed for upwards of two centuries.

A generation ago the usual and popular method by which the student in architecture received his training was by being articled to some architect of position, who, if he were a conscientious master, would personally instruct his pupil and impart such of his knowledge as his time and practice would permit.

This system added a considerable number of honest guineas to the income of the successful practitioner in return for, I fear in many instances, the waste of good material and paper by pupils in drawing the "Five Orders" from text book plates with but very hazy ideas of the application or the relative proportion of their details, but still, according to the times, this system served its purpose well, and many older members of the profession, remember with kindly affection the help and encouragement they received from their masters in their studies, but the old order has changed for the more academic methods of the University schools of to-day, there being no less than ten such schools in England at the present time, among the principal ones are those of London, Liverpool, and Glasgow, and in the Dominions the University School at Sydney, N.S.W., and the latest one in our own University of Johannesburg.

It was not until the year 1882 that admission to the Royal Institute was only obtained by students passing the obligatory examination, and this naturally gave greater stimulus to architectural education and the necessity for the establishment of properly organised classes; these at first being architectural classes attached to Provincial Art and Technical Schools, in addition to the Academy Schools and the Architectural Association school in London, more generally known as the A.A., The obligatory examinations of the R.I.B.A. also provides a number of pupils for the professional coaches, one might almost say crammers, that sprung up, whose chief objective was to impart as many theories and solutions as possible to the students to be discharged later on at the examinations, in many cases neither digested nor assimilated, and such was the beginning of the systematic and academic training in vogue to-day. It is now generally accepted that the academic courses of the architectural schools in conjunction with the practical experience to be obtained in an architect's office is the sounder early training for the young architect than the old system of pupilage.

About the year 1884 a strong movement in favour of the statutory registration of architects began in England but, finding little favour at that time with the governing body of the R.I.B.A., which continued a very conservative policy, resulted in the founding of the Society of Architects, whose primary object was to obtain legislation for the registration of architects and atlhough up to the present no Architects' Registration Bill has been placed before British Parliament, it is largely due to the moral and financial support of the Society of Architects that our present Transvaal Act was promulgated.

About the same time similar movements took place in the Cape, and a little later in Australia, when a Bill was presented to the House of Representatives in Melbourne by the Victorian Institute of Architects, but which failed to succeed.

I am of opinion that the protracted delay of statutory qualifications of architects in England is largely due firstly to the lack of unanimity among the profession as a whole and, secondly, that the pro-registrationists are suspected of seeking Parliamentary powers to protect the interests of practising members rather than those of the public, and to form as it were, a close fence around the profession.

On the other hand, the prominent anti-registrationists are not free from the charge of a personal bias if not a self-satisfied attitude from their long-established position, emphasising the argument in opposition that registration did not tend to produce better architecture or better architects, and that a good architect was essentially an artist who could not be created by an Act of Parliament, and that, in addition, if registration was urged as a protection to the building public, the public was already amply protected by the municipal and local government building by-laws. This latter argument appears to me to be equally as self-satisfied, one hesitates to say snobbish, as the former was considered to be self-interested, both views failing to appreciate the wider outlook of vision, and each focussing on the detail of his own particular standing.

Statutory Registration requiring as it does proper

educational and systematic training for qualification, would ensure the minimum standard. " That the architect employed would be competent to erect buildings efficient for their purpose, planned on sound fundamental principals with a proper knowledge of materials and their methods of employment in construction, coupled with training in the canons and principles of proportion and design.

This would in no wise stultify the energies of the more gifted and brilliant students who would no doubt rise pre-eminent in their profession either with or without registration, and in addition the necessity for statutory qualification of an architect before being permitted to practise would undoubtedly stimulate and prove an incentive for more systematic education by those students inclined to follow the line of least resistance.

I have so far very briefly dealt with the education of the student, and I think there is another important aspect to be considered, and that is the education of the public to a proper appreciation of architecture.

How often has it been said that people are not interested in architecture, and one has noticed that when some important building is to be officially opened or a foundation stone is laid a full description of the building will appear in the public Press, the functions it is designed to fulfil, with the name of the building firm who erected it, but too often the omission of the architect's name who designed it. Why should he be born to blush unseen or unheard of? Gentlemen, the fault is mainly our own, or at least that of our governing bodies. For more years than one cares to remember it was considered derogatory for an architect to exhibit his name upon his building. Fortunately, however, the Royal Institute has now seen fit to revise its code of professional conduct by permitting its members to exhibit their names in an unostentatious manner on the facades of the buildings they are erecting.

People are interested in architecture; they pass daily by buildings possessing fine qualities and beauty of design, but have had no means of knowing whose is the creation or whether the work is that of an eminent or more obscure member of the profession.

They are like children who are attracted instinctively by things which please, but being ignorant on the subject are too shy to discuss so mysterious a subject or architecture, although it is architecture (or the lack of it) that one is in daily contact with all our lives, but content themselves with observing that they like this building or dislike that one without any sound cogent reason for so doing. Even our public Press is afraid to tackle architecture, excepting on occasions to make a brief reference to some new biulding, yet considers it one of its public duties to publish critiques on pictures, sculpture or music while every new book is reviewed in the literary notes of our newspapers. Are these more important than architecture, the only one of the arts that is purely utilitarian and an absolute necessity for the conduct of our business through life.

Public exhibition of drawing submitted in architectural competitions and those prepared for important buildings should, I think, be encouraged together with a critique by a competent and impartial critic whenever possible. This would do much to stimulate public interest in architecture, and it might be even a good thing for architectural notes to be published in the public Press giving a short analysis of our important street architecture, on the composition and proportions of the facades, the suitability of a certain architectural treatment in relationship to its environment and the necessity for the character and functions of our buildings being expressed in their designs.

This would, I feel, bring about a better appreciation of architecture, and eventually create a greater sense of responsibility among our citizens, leading them to realise that our public and commercial architecture is the outward expression in stone and brick of our ideals, aims and aspirations as a nation.

This educational process would probably be slow and many a fine opportunity lost, in many cases the wrong people would probably get the best jobs, but undoubtedly progress in the right direction would be made to a proper sense of public civic pride in the architecture of our towns and cities.

To return to the subject of registration. In the Transvaal architects have enjoyed this status conferred upon them for the past 12 years, and in approaching the Union Parliament for an extension of the Architects' Act to the Union we shall be required to prove our worthiness of Registration during the past 12 years as justifying its extension. The fierce light of public opinion will be directed to our profession, and the actions of the members of it and our responsibilities are therefore great, and it is only by the integrity of our actions in exercising the duties of our profession can we demonstrate that the responsibility we have assumed is not misplaced.

I am of opinion that having drafted the proposed Parliamentary Bill, which is really a legalised code of professional ethics, it is the duty of our Administrative Councils to advise and adjudicate when necessary on the actions of members in their practice by the interpretation of our by-laws and regulations, so that whenever possible the settlement of disputes between

members of the profession or members and their clients can be effected without the publicity of recourse to law, which, I feel, has a tendency to lower the prestige and dignity of the profession. Finally I would like very briefly to say a word on the profession as an art; we so often designate architecture as the Mistress Art, a poetical expression used, I am afraid, rather glibly.

Art is defined by Webster as "The application of skill and taste to production according to aesthetic principles; an occupation having to deal with the theory or practice of taste in the expression of beauty in form, colour, sound, speech or movement."

I think I cannot do better than quote to you Mr. William Locke, the novelist, in a paper recently read before the Royal Institute. Mr. Locke said, inter alia, "We come as near as we can to define art by saying that the function of the artist is to express the transcendal in terms of common life. We are all artists (there is only one art), poets, painters, sculptors, musicians, architects and novelists are all pursuing the same object, naturaly in different ways and through different media: the writer in words, the sculptor in marble, the architect in stone and the musician in sound."

Our art is a practical necessity, the only purely utilitarian form of art, we must have houses to live in, offices and commercial buildings to work in. To be faithful and sincere to our art it behoves us to apply ourselves to the production of these practical necessities in aesthetic principles with the utmost of our skill, power and taste by which means alone can we hope to succeed.

In conclusion, the President said there is one other point on which I wish to touch upon which has no counterpart in the education of the Architect. I wish to bring before your notice the activities of the Associated Scientific and Technical Societies of which we are foundation members. At the Annual Meeting held in this room the President pointed out the activities of those Associated Bodies and the help they could give one to another. The Technical Club is at present hardly paying its way, but there is no reason why it should not do so if all members used it as much as possible and its services for afternoon teas, dinners, etc. This undoubtedly is a very important institution in South Africa. The President also stated that although this movement was started in America two or three years ago, we in South Africa have advanced much further than America in this matter and he felt the Institution would be a great tower of strength to all professional bodies in the future.

At one of the meetings a resolution was passed that any one of the bodies associated should not oppose the operation of any other constituent body without the consent of the whole Executive.

We, who have our own Act, can help those who wish to get an Act for themselves by advising them on our own experience. I do urge members of our Association whenever possible to use the Club in order to make the Techni al Club a real power and success in South Africa. In this connection three members of your Council are on the Executive of that body. As it happened, their meetings have frequently synchronised with our own Council meetings. This fact is responsible to a very great extent for some blanks you will see in the attendances of the members of the Committees of our own Association, when the members have been absent they have been doing their duty on the Council of the other body. In scanning through the list of attendances at the end of the Report, you may think that certain members of the Council have not been doing their duty to this Association, the reason being that they could not be in two places at the same time. **(Loud and prolonged applause)**

Mr. Burton: Mr. Chairman,—I would like to propose a vote of thanks to the President for his able address. The subject about which you have spoken is one in which we are all deeply interested. The question of registration and education of the Architect is the most important one that is before the Architectural profession throughout the whole Union at the present time. The way that you have dealt with it is appreciated by us all. I trust that every one of us will remember some of the subjects you have brought up. We will do all we can, both among ourselves and outside, to encourage the promotion of the Bill for which you, as Chairman, are working on the Executive Committee. I cannot allow this meeting to go on further without passing a vote of thanks to you.

The President, in a few well-chosen words dealing with the subject, thanked Mr. Burton and members present for the vote of thanks.

Mr. N. T. Cowin proposed Professor G. E. Pearse and Mr. F. Williamson as scrutineers of the voting papers for the election of nine members of Council, which was agreed to.

The President, proceeding to the election of President and Vice-Presidents and members of the Council, said:—

"It is my pleasing duty to declare Mr. J. S. Donaldson duly elected as President for the ensuing year."

"Mr. Donaldson's nomination was put forward according to custom and I am very pleased that there is no other candidate for that office. I think that the President should be elected unanimously from the members of the Association and the fact that no

other nomination was put forward from outside the Council shows quite clearly that it is the wish of the members. In that you have been so unanimously elected I wish to congratulate you. I know that you will have the full support of the Council and I congratulate you on your unanimous election as President."

Mr. J. S. Donaldson, on taking the chair, said: "Mr. Powers and gentlemen, I wish to express to you my deep appreciation and thanks for the honour you have conferred upon me in electing me your President for the ensuing year.

"I feel somewhat diffident in accepting the position, but I realise that although you are fully aware of my shortcomings you have unanimously elected me to this high office, and in accepting the position I have the assurance that in the execution of my onerous duties I shall have the hearty and earnest support of the Council and of every member of the Association.

"Our hearty thanks are due to the retiring President, Mr. Powers, who during the past year has so ably conducted the affairs of the Association.

"I personally would have been pleased if he had seen fit to carry on for another year.

"The work of the Association which is reflected in Council's Report does not lessen but increases year by year. The introduction and passing of the new By-law enabling members other than Councillors of the Association to be elected to Committees, was a step in the right direction, tending as it undoubtedly will, not only to facilitate the work of the Council, but bringing the members more in touch with the members of the Council and their work.

"Mr. Powers, in his able and lucid valedictory address, has covered most matters of importance. Time being short and much business to be transacted, I will be brief. I feel that I cannot conclude my remarks without making some reference to the very serious and unfortunate industrial situation existing here to-day. One cannot go into the merits or demerits of the dispute, one can only earnestly hope that a satisfactory and permanent settlement will soon be reached so that the country can settle down to the development of its great resources, and to the establishment of the very necessary industries which are so much needed.

"I earnestly hope the Government will carry out its promised policy of afforestation which would afford employment for the many of the now unemployed, and would at the same time create an industry of immense value and benefit to the whole community. A perusal of the very important paper on afforestation which was read some time ago by one of your past Presidents, Mr. D. M. Burton, would be both instructive and profitable.

"In view of the prominence given to afforestation at the present time, I hope Mr. Burton will at no distant date again read his paper at one of our quarterly meetings.

"I thank you again for the honour you have done me, and I trust the year before us will be profitable and harmonious and tend to the prosperity of the Association." Loud and prolonged applause.

Mr. F. L. H. Fleming was elected Senior Vice-President and Mr. Allen Wilson elected Junior Vice-President.

Mr. Fleming, replying, said: "It has been borne upon me to endeavour to ascertain how I can adequately serve the interests that the Council has in mind. I can only say that I shall do my utmost in the interests of the Association of Transvaal Architects. My hope is that I do better in the future than I have done in the past."

Mr. Allen Wilson: "Gentlemen, I thank you very heartily for having elected me as your Junior Vice-President. The work that I have been able to do for the Council has been a work of love. I had no idea there was so much work to do. It has been of very great interest to me and you can rest assured that as far as I am concerned, as one of your Vice-Presidents, I shall use my best endeavours to do all I can in the interests of our Association."

The newly-elected President thereupon presented an enlarged photograph to the retiring President, to which Mr. Powers replied briefly as follows:—

"Mr. President, and my colleagues on Council, I thank you very much for this enlargement of my photograph with which you have kindly presented me. I do appreciate it as a recognition of your good wishes.

"I always object to having my photograph taken for the same reason that I have always avoided as far as possible having mirrors in my own house, as one is apt to come upon oneself unawares, but in this case the blow has been somewhat softened by the photographer's art.

"The work on the Council for the past year has been particularly pleasing and I think some progress has been made by the Association of Transvaal Architects for the good of the profession generally. The members of the Council have not always agreed with one another, but still we have shown among ourselves that the right spirit is alive within us and that we are not a dead body. I think it only right it should be so. If we had no disagreements we should

do nothing worth mentioning. We only appreciate by argument the really true merits of the case and I am perfectly certain that when the meeting has terminated there has been the best of good feeling amongst us.

"Gentlemen, I thank you very much for this token of your appreciation and I trust it will be hung amongst those of my predecessors in the office of the Association in Exploration Buildings." (Applause.)

Auditors.—Mr. Fleming proposed and Mr. Powers seconded that Messrs. Aiken & Carter be re-elected as Auditors for the coming year at the remuneration, as in the past, namely, £12 12s., be paid to them for the past year's audit. Agreed.

The following notice of motion was submitted by Mr. D. M. Burton:—

> "That a Students' Roll be opened by the Association for the purpose of recording the names of all these Students eligible in the opinion of the Board of Examiners; further, that a subscription of 10s. 6d. per annum be paid by all registered students and that an application be immediately made for their admission to the Scientific and Technical Club."

Speaking to the motion, Mr. Burton said: "The object of the motion almost explains itself, it was in order that students attending the Architectural Classes and working in Architects' offices be eligible for membership to the Scientific and Technical Club. It is felt by so doing they will come in contact with others and learn something. A large number of lectures are given in this hall and those students would be more encouraged to come here and gain some good if they were eligible as members.

"Under our Act we have no right to open a register; in terms of that Act we feel that we can have some sort of roll whereby these students and these junior members can come to the Scientific and Technical Club.

"That is the basis of my motion which I hope will receive unanimous support."

Mr. Sinclair, in seconding the motion, said: "It would be a great help to students. It is intended to give cinema pictures of industrial, scientific and other interesting subjects every month which are to be informal meetings, and the Executive will welcome all our students at these lectures which will be fully illustrated by lantern slides, as well as films, and will greatly aid our students and I trust the students will heartily support this movement."

Mr. Waugh, in supporting the motion, asked if our students were to be admitted to our meetings. He did not see any objection and would like to see it done. Of course they could not vote. He would very much like to see students at our meetings and we could get to know them. He would very heartily welcome the duty of receiving these students into this Students' Register. He had very much pleasure in supporting the motion and suggesting an addition in the form of allowing students to attend our meetings by invitation.

Mr. Burton, in reply, said: "I would be very pleased if that were done. I feel so satisfied that that is the intention of the Council that these youths shall be invited to attend whatever meetings we have. I think the work of the Council in the past four or five years has shown that every member of the Council should come in contact with the senior members and wherever possible, gain advantage by so doing, and I have very great pleasure in adding that, Mr. Chairman, to the motion of mine: That whenever it is considered advisable, the Council should invite all junior members to attend any meeting or function."

Mr. Sinclair seconded the addition to Mr. Burton's motion.

Mr. Powers: "I would like to associate myself with Mr. Burton's proposition. The point has been raised that no provision is made for students. At the same time there is nothing in the Act which forbids us to bring students to these meetings. The spirit of the Act is what we have to deal with and not the letter of it. The act has committed a good many sins of omission. We are quite justified in enrolling students. The subscription of 10s. 6d. would be all absorbed by the subscription to this Club. The students would in no way be of financial assistance to the Association and not having any voting power I do not think ever will come in conflict with the Act. I am quite sure the spirit of all members is that they would like to see the students among us benefit by the lectures and hear the debates.

Mr. D. M. Sinclair said that students would be allowed at the Annual General Meeting. Anybody outside the Association, if they are asked by the Council or the Association, can attend. The Act distinctly agrees that it only excludes members in arrear with subscriptions who are members of the Association.

Mr. H. G. Veale suggested that instructions should be given to the incoming Council to consider the matter.

Mr. F. L. H. Fleming was of the opinion that it is obviously our duty to watch over the interests of the students. Mr. Burton's motion tends to that end. The suggestion made by Mr. Waugh would be well supported by the other members—it could be an

instruction to the new Council with the suggestion just made by Mr. Powers and could be met by the introduction of a by-law.

Mr. R. Howden thought the suggestion was the correct one. Certain notice must be given before a notice of motion can be brought before the General Meeting and he did not think it could be amended or altered in any way without proper notice. He thought the suggested amendments of this notice of motion should be referred to the new incoming Council.

Mr. Waugh: "If the notice of motion is put before the meeting it could deal with it in the way it likes, otherwise if another motion is brought before a subsequent meeting, and that meeting does not agree with every word of it, it would never be dealt with. It would be quite impossible to carry a notice of motion unless everybody were absolutely unanimous in the voting or you had the power of altering. I do not know how you are going to carry it to the Council."

Mr. E. H. Waugh: "I would like to propose a hearty vote of thanks be accorded to the Council for the past year for their very great work in carrying on the business of the Association." (Applause.)

Mr. H. G. Veale suggested that Mr. Powers' address be published in the local Press. This was agreed to.

Mr. H. Porter asked if it could be arranged for the incoming Council to go into the matter of the attendance of the Annual General Meeting. It seems to be rather a severe imposition that members of the Association are excluded from voting owing to non-payment of subscriptions. Would it be possible to amend that to "Any arrears of last year's subscriptions" because we are really dealing with the year that has just gone by and if a man is a few days late in his subscription, it seems rather a severe imposition to exclude him.

Would it not be possible for the incoming Council to go into the matter and deal with it.

The Registrar stated that the Council has always been sympathetic to gentlemen who have been in arrears, and two years ago a foot note was put on the Agenda to the effect that if the last year's subscriptions was paid, members would be eligible to attend and vote.

Certain members objected to this procedure on the grounds that it was contrary to the provisions of the Act and the outcome was an objection to the meeting which necessitated the calling of a second meeting for the transaction of that year's business.

Mr. Sinclair: We could get over that difficulty providing we said subscriptions were due on 31st December of that year instead of 1st January—then it will be all right. The Act says that no member shall be present unless he has paid his subscription—that is the only way it can be done.

The Scrutineers then presented the result of the ballot and the Registrar read the following list of members elected to Council:—

Messrs. D. M. Burton, E. M. Powers, D. M. Sinclair, G. S. Burt-Andrews, H. G. Veale, N. T. Cowin, R. Howden, Gordon Leith and Walter Reid.

The President: I have much pleasure in declaring these gentlemen duly elected to Council for the current year.

With reference to the personnel of Committee, notices were sent to all the members. The alteration to by-law 22 now permits members, outside of Councillors, serving on these Committees and we shall be very glad if the members will come forward and offer to serve on these Committees.

The President proposed a vote of thanks to the Scrutineers, Messrs. Pearse and Williamson, for conducting the ballot, which was agreed to unanimously.

The meeting then terminated.

STUDENTS' EFFORTS.

The River Rhine flows horizontally until it reaches Basle, and then flows vertically.

To find the area of the walls of a room, you take the barometer and multiply by the height.

A straight line is one which being continually produced shall never end.

A hypotemuse is when two sides of a triangle are equal.

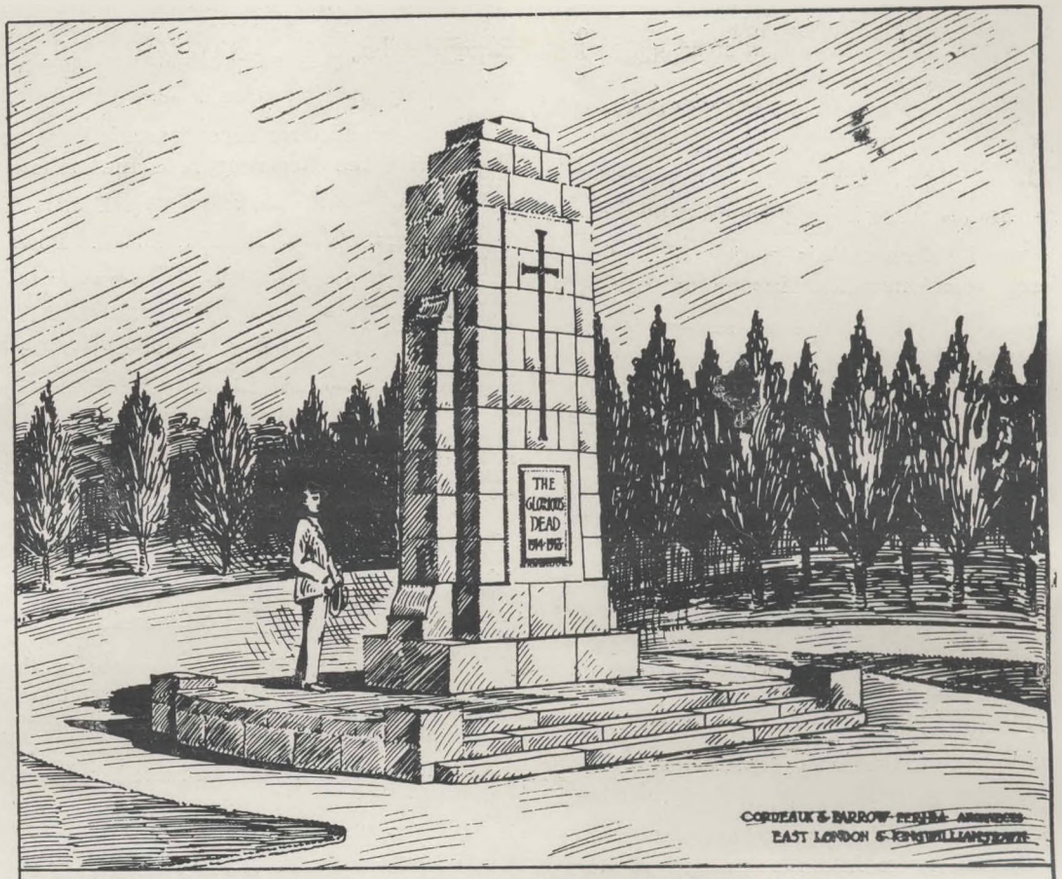
Isosecles triangles are used on charts to join up places with the same weather.

A compass tells a man where he ought to go; it aways points to the sun.

Parallel straight lines are those which come together closer, further off, but do not meet.

The Guilds were the ancestors of trade unions, but now only old women go there to sew.

Julius Caesar was renowned for his strength. He threw a bridge across the Rhine.



CAMBRIDGE WAR MEMORIAL.

CAMBRIDGE WAR MEMORIAL,

1. We received three parcels of drawings on 5th July, 1921, for assessment. One parcel contained two separately drawn and separately described designs, marked by us "No. 1" and "No. 2." One parcel contained one designed marked by us "No. 3," and the remaining parcel contained five designs, not separately drawn or described, marked by us "No. 4."

2. The five designs marked "No. 4" we at once set aside as being entirely unsuitable and undignified.

3. The design marked "No. 3" we found to contain the elements intended by us in regard to simplicity of character and suitability in type for the class of material to be used, but there is a lack of the elegant proportion inseparable from a well-designed Cenotaph, and we had to set this design aside also.

4. Design "No. 2" we consider to be somewhat slight in character for the purpose, though it is well proportioned.

5. Design "No. 1" is the best sent in. It is simple in character and suitable in every way for the material to be used in its construction.

It consists of a beautifully proportioned Cenotaph rising to a height of 20 feet above the ground from a well-planned surround of steps and curbing, and it cannot fail, if erected, to call to mind the great Cenotaph at Whitehall, London, around which the tears of Empire have been shed.

The lay-out of the paths and grass beds is simple and most suitable to the shape of the ground surrounding the monument.

We therefore place Design "No. 1" first, and, subject to Clause 11 of the Conditions being complied with, we recommend that the authors of this design be entrusted with the carrying out of the scheme in terms of Clause No. 13 of the Conditions of Competition.

We consider that the design placed first will prove highly satisfactory if erected in your local granite, and we should like through you to congratulate the authors on the excellence of their design.

(Signed) JONES & McWILLIAMS,
Assessors.

Book Reviews.

"Fire Prevention and Fire Protection." By Joseph Kendall Freitag, B.S., C.E., 2nd Edition, revised. Published by John Wiley & Sons, Inc., London, Chapman & Hall, Ltd., 11, Henrietta Street, W.C.2.

The book is the second and revised edition of the work. It has been brought up-to-date and extensive changes have been made in the section dealing with theatres and garages due to advance in knowledge and practices. The work is written largely on American experience and all through the book American statistics, insurance terms and the like are used.

Chapters 1 and 2 deal with statistics regarding losses and show how enormous these losses in the States have consistently been compared with European countries and draw the lesson that the inferior construction standards originally in vogue in the States are largely responsible for the appalling loss ratio. Although considerable advance has been made, the progress has not overtaken the increase of hazard due to the industrial development, ever-increasing complexity of processes, greater pressure of work and increasing exposures due to lofty buildings of large cubical capacity. As a consequence the losses in the United States continue to show a most unhealthy per capita ratio compared with other countries. The author then enlarges upon the reasons for this state of affairs in Chapter 2 under the heading of "Theory and practice of fire prevention and fire protection."

Chapter 3 deals with the theory and practice of Fire Insurance, beginning with a short history of the origin of the first few American Fire Insurance Companies. The subjects of agency organisation, rating methods, rating bodies and allied organisation are treated in turn. A reference is made to Mr. Francis C. Moore's "Universal Rating Schedule," a classic publication on sound and scientific rating of fire risks. It is pointed out how lack of legislation in the States for dealing with questions of fire prevention and fire protection has led to the formation of private bodies to advance such subjects, amongst which is mentioned the National Fire Protection Association. This body was originally formed as a result of non-uniformity of practice and ideas in different parts of the States on the subject of fire prevention and building construction, etc., requisite to that end: it has now been in existence 25 years and it has performed a most useful function in standardising types of construction most suitable for different trades and manufacturing purposes, plans for installation of special plants used in either manufacturing, power production or fire extinguishment. Although the active workers of the Association are in America the membership is international and the literature published by the Association and its various booklets on standard equipments are always worth reading. The subscription is moderate and architects would gain good value for money by seeking membership.

Chapter 4 treats with "Slowburning or Mill Construction." A building of this type is one which, while not professing to be fire-proof (using the term in its commonly accepted sense, for no buildings are fire-proof), is so constructed that the spread of fire is retarded to the utmost, the structural timbers being so arranged as to offer the least opportunity for receiving and transmitting ignition. The various architectural details to be followed in the construction of such a building are enlarged upon in detail, such as joist and girder arrangement, protection of steel girders, girders and roof timbers carried on wall plates, belt races, hoist and stair wells, saw-toothed roofs, etc., etc. The designation used for the type of construction is an American expression and is not known in England.

The book contains references to Fire Tests and Materials and comprises four chapters.

Chapter 5 treats with the various testing bodies established in the States, England, Germany, etc., and the scope of their operations.

Chapter 6 deals with losses which have occurred in fire-resisting buildings (the type usually referred to by architects and the public as fire-proof) and is most instructive in showing the absolute fallacy of regarding buildings as fire-proof merely because only incombustible material is used in their construction. The Chapter opens with the words " every fire teaches a lesson " and the lessons to be learnt from the details given of numerous fires in so-called fire-proof buildings should be well studied by architects in this country, called upon to erect such buildings. The main factors brought out in this chapter are the absolute necessity of efficiently protecting all exposed constructional iron and steel work, the banishing of open and non-fireproof stairwells or other floor openings, that provision should be made for handling local floor fires by a hydrant pipe line up the main stairwell with cuplings on each floor, and that the value of a structure's own fireproof construction may be largely nullified by creating therein window or other exposures to hazardous surrounding properties, unless such exposures be protected by extensive drenchers. The last-named necessity is further emphasised in most interesting accounts of the manner in which so-called fire-proof buildings stood the tests of the Baltimore and San Francisco conflagrations. Architects in this country should not be lulled into a false sense of security through past freedom in South Africa from really large conflagrations. The possibility of such is as great here as in other parts of the world. Capetown and Port Elizabeth are particularly vulnerable. Durban has also possibilities, but in this town more than in any other centre external drencher protection has been adopted.

Chapter 7, after recording the protest of the International Fire Prevention Congress which met in London in 1903 against the designation of " fireproof " being applied to buildings built of fire-resisting material, proceeds to record the behaviour of various building materials when subjected to the joint tests of intense heat and water. Some of the results given are derived from actual conflagrations while others were gained from testing plants.

Chapter 8 continues the examination of various building materials in relation to permanency and to danger of corrosion of iron and steel construction work through moisture, deleterious chemical action, electrolysis and vibration.

The subject of architectural design is dealt with in separate chapters being devoted to (a) planning and general design; (b) efficiency versus faulty construction; (c) fire-resisting floor design, beam and girder protections and ceilings—in this chapter several useful beam tables are given; (d) columns and column protection; (e) fire-resisting partitions; (f) fire-resisting shutters, windows and doors; (g) stairways and fire escapes; (h) elevator shafts and enclosures, pipe shafts, chutes, etc. The information given in these chapters is too detailed to complete to attempt any analysis or resume. Suffice it to say that the descriptions and numerous illustrations provided render it difficult to think any point has been overlooked.

Part IV follows in sequence from Part III and treats upon fire-resisting construction. Again it is impossible to pick out any particular portion for special mention. The whole is full of wisdom and facts and must be read to be appreciated. The various chapters deal specifically with (a) terra-cotta floors, girder protections, etc.; (b) concrete floors and reinforced concrete; (c) combination terra-cotta and concrete floors; (d) wall construction; (e) roofs, suspended ceilings, furring.

An important part of the work is devoted to features to promote fire prevention and fire protection to special structures to which end chapters are given to (a) theatres; (b) schools; (c) residences; (d) factories; (e) garages; (f) safes and vaults; while the subject of metal office furnishings and a few special hazards are dealt with including spontaneous combustion. The chapters with regard to theatres, etc., do not pretend to be exhaustive, but none the less the ground is covered very fully and inference made to other standard writings on the subject. As regards theatres, details are given of past disasters and the causes leading thereto and planning and structural suggestions put forward to obviate similar disasters in future erections.

Part VI deals with auxiliary equipment and safeguards. The opening chapter demonstrates the necessity of even fire-resisting buildings being provided with

extinguishing appliances, alarms, etc., and subsequent chapters dwell in detail upon (a) automatic sprinkler installations; (b) automatic fire alarms; (c) simple protective devices such as fire buckets and extinguishers and fire retarding paints and solutions for woodwork, textiles, etc.; (d) watchmen and devices in connection with their rounds; (e) stand pipes and their auxiliary equipment; (f) private fire brigades; (g) inspection and maintenance of fire protective devices; (h) fire drills.

The book being well produced should find a place in every architect's office as a work of reference. It contains a volum of information such as is regularly sought by all architects from time to time when planning public buildings.

"Kidder's Architects and Builders' Handbook. By Thomas Nolan. 17th Edition. Published by John Wiley & Sons, Inc. Chapman & Hall, Limited, 11, Henrietta Street, London, W.C.2. Price 40/- net.

This handbook is a valuable and most useful desk compendium and should find its place in every Architect's, Engineer's and Builder's office.

The fact that the latest issue is the 17th Edition speaks volumes for the usefulness and popularity of the work.

The authors have spared no pains to give sufficient detail and information for all ordinary purposes and the key to many of the larger problems that are met with during the course of professional practice.

It would be invidious to point out any particular chapter as being of greater value than another for the reason that in professional and practical experience one seeks one form of information more often than another.

The present edition has two new chapters added, one on Specifications for Steel Work of Buildings and one on Domical and Vaulted Structures, other chapters have been re-written or revised.

That no effort or expense has been spared to make this handbook a correct work of reference can be seen by a perusal of the names of those associated with Professor Nolan, University of Pennsylvania.

The subjects are dealt with in parts, each being correlated in progressive form.

Chapter VII deals with the stability of Piers and Buttresses and forms an interesting and clear solution of many of the problems one is faced with in ordinary practice, the coloured line diagrams assisting greatly in this.

The table given, on Safe Loads for Steel Columns is both handy and useful for easy reference and set out in a way most beneficial for a student of this subject.

The subject of Specifications for the Structural Steel Work of Buildings is an additional one on previous issues of this work and should prove of inestimable value to practitioners. Too much importance cannot be laid upon the value of careful work in connection with structures designed to carry problematical loads, it is the architect's duty to provide against unknown contingencies.

More and greater use is being made of Steelwork in Buildings each year and the data given in this work will prove a useful reference.

The additional chapter of Domical and Vaulted Structures is a most carefully prepared work on a difficult subject and the diagrams illustrating the subject matter are clear and concise.

A number of works previously published have contained articles on Domes and Vaulted Structures, but few have brought out the principles and calculations quite as clear as the authors of Domical and Vaulted Structures set out here, and students in building will be well repaid by careful perusal and working of the examples illustrated.

It is instructive to read the chapter on Architectural Acoustics, a subject upon which architects so often find themselves at a loss to understand, here we have a set of principles upon which to work and which, if followed, cannot help but improve our planning of

Halls, Theatres and Public Buildings. Much time and thought has been spent on Acoustics often to little or no purpose. The author here gives examples and information such as every architect should make himself familiar with.

"A History of Architecture on the Comparative Method." By Sir Banister Fletcher. 6th Edition. B. T. Batsford, Ltd., 94, High Holborn, London. Price two guineas net.

The History of Architecture on the Comparative Method by Sir Banister Fletcher, is primarily intended for the student and the layman. It is obviously impossible within the confines of one volume to attempt a detailed description of an Art as widely divergent as Architecture. Realising this, the author has contended himself with what amounts to a "precis" of all the styles which places the student on a firm basis for future specialisation.

The author has approached his subject by a system which compares the various architectural styles and the factors which influenced their inception and progression. When it is seen that the periods dealt with range from the Minoan remains in Crete to the Woolworth Building in New York, the scope of the work will be realised. The latest (6th) edition embodies several improvements on its forerunners, notably the addition of a large number of photographs taken by the author himself, and the substitution to a large extent of perspective sketches for elevations. The latter is especially noticeable in the Italian Renaissence period, where it enables the student to visualise the buildings dealt with in three dimensions instead of in two.

There is considerable revision in the present volume, due to the author's travels in numerous countries for the purpose of gaining first-hand information regarding his subject.

Until such time as some authoritative body can compile a detailed treatise on the Architectural styles, this volume will probably remain the standard work on the History of Architecture.

J. P. N.

"Building Contracts," the principles and practice of their administration. By E. J. Evans. Chapman and Hall, Ltd., 11, Henrietta Street, London, W.C.2. Price 10/6 net.

This book, as the author states, is an attempt to satisfy the need for information about the "Business" or "Administrative" section of a building contractor's business and should prove useful not only to contractors, but also to managers, clerk of works, foremen, tradesmen and students. It is divided into four parts, viz.:—(1) Administration of Contracts; (2) Office Management and General Notes; (3) Book-keeping, etc.; (4) Trade Memoranda and Plant Lists.

The author gives some very sound advice in his introductory remarks in a general way and points out that the four cardinal errors to guard against in business are Inertia, Disorganisation, Procrastination and Waste and possessing a sound commercial education a contractor or student should aim at "efficiency" in everything undertaken by him.

The bulk of the information in the book is applicable to trade conditions in this country, but the chapters on Insurance Rates and Taxes, Railway Rates and Charges, Breakages and Shortages, have little or no bearing on the practice here, as they are written up on the customs and rules prevailing in the Old Country.

Useful hints are given of the methods of keeping business at a steady level in order to retain the regular services of an efficient, energetic and contented staff of workmen.

In the chapter on Estimating, it is true, as stated, that the chief factors that count are experience, foresight and sound common sense; this subject is dealt with in a general way, no details of prices are given, but the notes are practical and useful. A comparison is made between trade union conditions in America and in England. In the latter country organised labour has insisted upon a uniform and stationary

wage, irrespective of output, whilst in America the minimum amount a man is expected to do either in an eight-hour day or on piece work is fixed, and if he falls below that scale he is regarded as inefficient. There is no limitation upon the amount he may do, nor is there any reluctance to pay him the full value of his services. Workers are encouraged to do their best and are paid proportionately. The American plan should be adopted with advantage in this country.

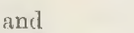
We are told that whenever possible the Bill of Quantities should be thoroughly and minutely checked by the contractor and architects will often lend him their rough Bill of Quantities for the purpose of checking. No doubt a careful scrutiny of the quantities is imperative, but the suggestion of the author is impracticable and not acted upon here to our knowledge and the idea of an architect getting a contractor to check his quantities is incongruous and unseemly.

A chapter is devoted to the architect and the contractor is advised that the wisest course to adopt is to be at all times on the best terms possible with his architect. It is pointed out that delays due to the want of details are most detrimental to the contractor's interests and when a contractor finds his progress hindered by lack of details he should immediately prepare details for himself from the contract specification and submit them to the architect for his approval. This course of action would, we think, be keenly resented by architects of repute, and the better course would be to claim for delays due to this cause.

Sound practical advice is given on the selection of the general foreman and his duties are discussed in full. Each trade such as excavator, bricklayer, mason and so on is taken in detail and the particular knowledge required of each for ordering materials, obtaining all necessary tools and plant, and arranging for labour is thoroughly and methodically set out.

The sections on Office Management and Book-keeping go minutely into this important branch of a contractor's business and, as stated, it is imperative that he should watch the progress of the same very closely and be conversant with the true financial state of his affairs. The author is not far out in stating that there are very few contractors who understand how to systematically and effectively keep a proper Prime Cost Account. The system which he elaborates so well involves much care and attention and should lead towards an efficient and trustworthy method of keeping the various contract costs.

N. T. C.



A P.C. Amount.

The following letter has been received from the Secretary of the Master Builders and Allied Trades Association, and is published for general information by order of your Council with a recommendation that members will give effect thereto:

> "I am directed to inform you that complaints have been made by the Plumbers' Section of this Association that they are asked to allow for items on Schedules for such municipal services as sewerage, water, gas, electric light and fire service connections.
>
> I am directed to ask that you will be good enough to cause a P.C. amount for these connections to be set aside in future contracts."

Students' Prizes.

The following letter has been directed to each Architectural body in South Africa by direction of your Council and is published for general information:—

From time to time donations have been made by Societies and individuals of prizes, or sums of money, for the encouragement of Architectural Students. In the case of those prizes administered through the Association of Transvaal Architects they have been allotted upon competition work which has been thrown open to all students in the Union.

It is felt that the time is approaching when there should be correlation in this matter. When a Union Registration Act is obtained and the Architects of the Union are able to act as one body; and when the principle is more widely appreciated by the profession, the public and Government that it is the duty and privilege of any generation to provide in some measure for the advancement of Art and Architecture through the encouragement and education of the rising generation; it is felt that the prizes offered to students should and will aggregate to a sufficiency to provide considerable attraction and may ultimately reach the scale of Travelling Studentships.

This, however, is anticipation. In the meantime it is felt desirable that the principle here discussed should be broadly and constantly brought to the minds of the profession, the public and Government and that whatever the result may be in various quarters there should be some combination of the prizes offered either in their allocation or availability or both.

The immediate questions the Council of the Association would put to you are these:—

Are you willing as a body to bring forward in suitable quarters available to you locally the point of prizes for Architectural Students?

Are you willing that such prizes as are or may be administered by your body be made available to all students in the Union,

Would you be prepared to act in concert with the other bodies of the Union in considering and deciding how the allocation of available prizes should be made?

Advertising.

The attention of members is drawn to the subject of advertising. The matter has been brought to the notice of the Council of the Association in relation to the growing practise of erecting a site board, on which the Architect's name is painted, months before building operations are started. This practise is contrary to professional etiquette and forms a breach of by-law 51 (f) which is quoted for information:—

"Advertising in any publication or in any other way than by a card or plate giving name, address and profession."

By order of Council,

MURRAY K. CARPENTER,

Registrar.

The South African Academy.

(Under the Auspices of the Association of Transvaal Architects)

SELBORNE HALL, JOHANNESBURG.

The Exhibition will open on Monday, 1st May, 1922, at 3 p.m., and close on Tuesday, 9th May, 1922, at 9 p.m.

Hours of admission, 9 a.m. till 9 p.m. except Sunday.

Price of admission, **1s.**; Season tickets, **2s. 6d.** All School children are admitted to the Exhibition in the mornings free of charge, and should be accompanied by their teacher.

Price of Catalogues, **1s.**

Sale of Exhibits.—All enquiries respecting the sale of any of the Exhibits should be made to the Hon. Secretary.

All communications should be addressed to the Hon. Secretary, Murray K. Carpenter at 67, Exploration Building, Commissioner Street, Johannesburg.

THE NATAL INSTITUTE OF ARCHITECTS.

The Annual General Meeting of the Members of the above Society was held in the Secretary's office, 18, Field Street Buildings, Durban, on the 7th February, 1922, at 4 p.m.

The President said:—

Gentlemen,—It is my privilege and pleasure as the retiring President of the Natal Institute of Architects to review the work of the past year. After my first year of office in 1920 you were good enough to re-elect me as President for 1921, and during the year much good work has been accomplished by your Council. One of the outstanding features of the year's work was the First South African Architectural Congress which was held in Johannesburg in 1921 from September 5th to 8th inclusive, under the auspices of the Association of Transvaal Architects. auspices of the Association of Transvaal Architects. The Congress will be a landmark in the history of the Architectural development of this country. The Congress met at the suggestion of this Institute to discuss various matters effecting the profession. Your Vice-President and myself represented this Institute, while architects from all over the Union came as representatives from thirteen other Societies. One of the most important items dealt with being a New Rorm of Conditions of Contract, which was discussed with and agreed to by the National Federation of Building Trade Employers in South Africa. This form will now be universally used throughout South Africa on all contract work.

The most important subject dealt with and which vitally effects both the Architect and the general public is the Union Registration Act; an Act which would protect the public against the unqualified man, safeguard the interests of the trained architect, and help to raise the standard of architecture in this new country. All the previous work done to achieve this desirable Act was reviewed and finally your President proposed the following motion: "That in view of the opinion expressed by the Minister concerned we recommend to the several Provinces here represented that a Union Bill be proceeded with and the draft proposed Architects' Act 1913, prepared by the Association of Transvaal Architects, be accepted as the basis of discussion for the new Bill." An Executive Committee with full power to act was then elected.

Among other items discussed were Rules governing Architectural Competition; the advisability of obtaining a standard set of Municipal Building Bye-Laws throughout the Union; Reinforced Concrete Construction; and the recommendation that foremen artisans working in this material should be registered and licensed.

Art and Education was also discussed, and I would remind you that a Chair of Architecture has been established at the University in Johannesburg. This should go far in helping to raise the dignity and practise of architecture as a profession in this country.

It is not generally known that in the Old Country an architect has copyright in: (1) His original drawings and plans. (2) The building or structure constructed therefrom; and that copyright may not be infringed by an unauthorised reproduction of the drawings or plans. Under the Copyright Act 1911 are sections dealing with "Artistic Work" and "Architectural Work of Art." The very word "Art" means to thousands nothing but painting.

Another important subject discussed was Town Planning. As the importance of this had not gained recognition with the general public, it was agreed to endeavour to start Town Planning Associations in each Province with a view to ultimately forming a South African Town Planning Association. I need hardly remind you that the Housing, Town Planning, etc., Act 1919 in Britain renders it compulsory after 1923 for all local authorities with a population over 20,000, to prepare a Town Planning Scheme for all land in their area likely to be built upon.

If this is necessary at Home—how much more important here! Your Council endeavoured to arouse interest in this matter by inviting Mr. Thompson, F.R.I.B.A., the Town Planning expert from Home, to lecture to this Institute, and the members of the Town Council were invited by this Institute to a lantern lecture which was given in the Technical College. The lecture was most informing and quite a revelation to those who had not studied the subject as to the large savings effected by foresight, and the big decrease in mortality due to efficient planning. Your Council approached the Town Council and endeavoured to persuade them to ask Mr. Thompson to lecture publicly, but unfortunately for Durban we failed.

The Durban War Memorial was another matter your Council dealt with and it will be fresh in your mind that a definite and determined stand this Institute took as regards the site. The Town Council requested this Institute to draw up Conditions of Competition and the excellent result attending the Competition is our reward. We hope now to have a War Memorial and also a Civic centre worthy of Durban.

The last item calling for action by your Council

was the New Winter Gardens Scheme. Immediately upon the scheme being made public we wrote to the Town Council asking them to re-affirm their previous decision, viz.: that they will, where possible, place in the hands of practising architects in the Borough the designing of any scheme costing more than £1,000. In this case plans have been prepared in the Boro' Engineer's Office of a building costing at least £15,000. Although we argue that the scheme as published is not the best that can be done, we repaired from criticising it; but as an Institute and as Burgesses we were quite willing to advise the Town Council on such an important scheme had we been approached.

Our official organ "Building," also extracts of the minutes of Council meetings, have been circulated to all members and have been much appreciated. Your newly-elected Council will deal with the statistics and reliable information which we possess showing the large number of plans prepared by others than qualified practising licensed architects, and they intend to act firmly in the matter.

In closing, I must thank the Council for their full support and help during my two years of Presidency and especially to the Secretary whose work has increased by reason of the larger activities of the Institute.

Our thanks are also due to the Technical College for the use of the Architectural room and to the Press for publishing reports from time to time.

The following gentlemen were elected to the Council for the ensuing year:—

Messrs. G. T. Hurst (President), E. O. Payne (Vice-President), W. S. Payne, F. J. Ing, W. Paton, B. V. Bartholomew, and Lowell Mason. T. H. Chaplin, Secretary.

A hearty vote of thanks was accorded to Mr. Bartholomew for his year of office.

THE CAIRO HOSPITAL COMPETITION.

A cablegram has been received by the R.I.B.A. from Cairo announcing that the designs of the following six competitors have been selected in the Preliminary Competition:—

John Reginald Truelove, A.R.I.B.A., c/o Imperial War Graves Commission, Longuenesse, St. Omer, Pas de Calais, France.

Messrs. Cackett & Burns Dick, FF.R.I.B.A., Pilgrim House, Newcastle-upon-Tyne.

Messrs. W. & T. R. Milburn, FF.R.I.B.A., 11, Esplanade West, Sunderland.

Messieurs Pierre & Louis Guidetti, 31, Quai Bourbon, Paris.

Messrs. Lanchester, Rickards & Lucas, FF.R.I.B.A., and T. A. Lodge, A.R.I.B.A., 19, Bedford Square, London, W.C.1.

Messrs. Nicholas & Dixon Spain, FF.R.I.B.A., 19, Hanover Square, London, W.1.

Our President.

Mr. John Stanislaus Donaldson, our President 1922-23, was educated at St. Andrew's College, Bloemfontein. He commenced his Architectural training as a pupil of Mr F. Hillner, Architect, who practised in Bloemfontein, chiefly in ecclesiastical work. Subsequently he was engaged on school work in Kimberley, and in 1887 proceeded to Johannesburg, becoming one of the Pioneer Architects of this City. He has practised in Johannesburg ever since, designing and carrying out many important buildings in the City and other centres.

Mr. Donaldson has been for many years the principal consulting Architect to the Real Estate Corporation of South Africa, Ltd., in Johannesburg.

He is a past Hon. Secretary, and a past President of the Society of Architects (South African Branch) and a Fellow of the Society of Architects (London).

Mr. Donaldson has always taken a very keen interest in the work and affairs of the Association, having served on the Council since 1916.

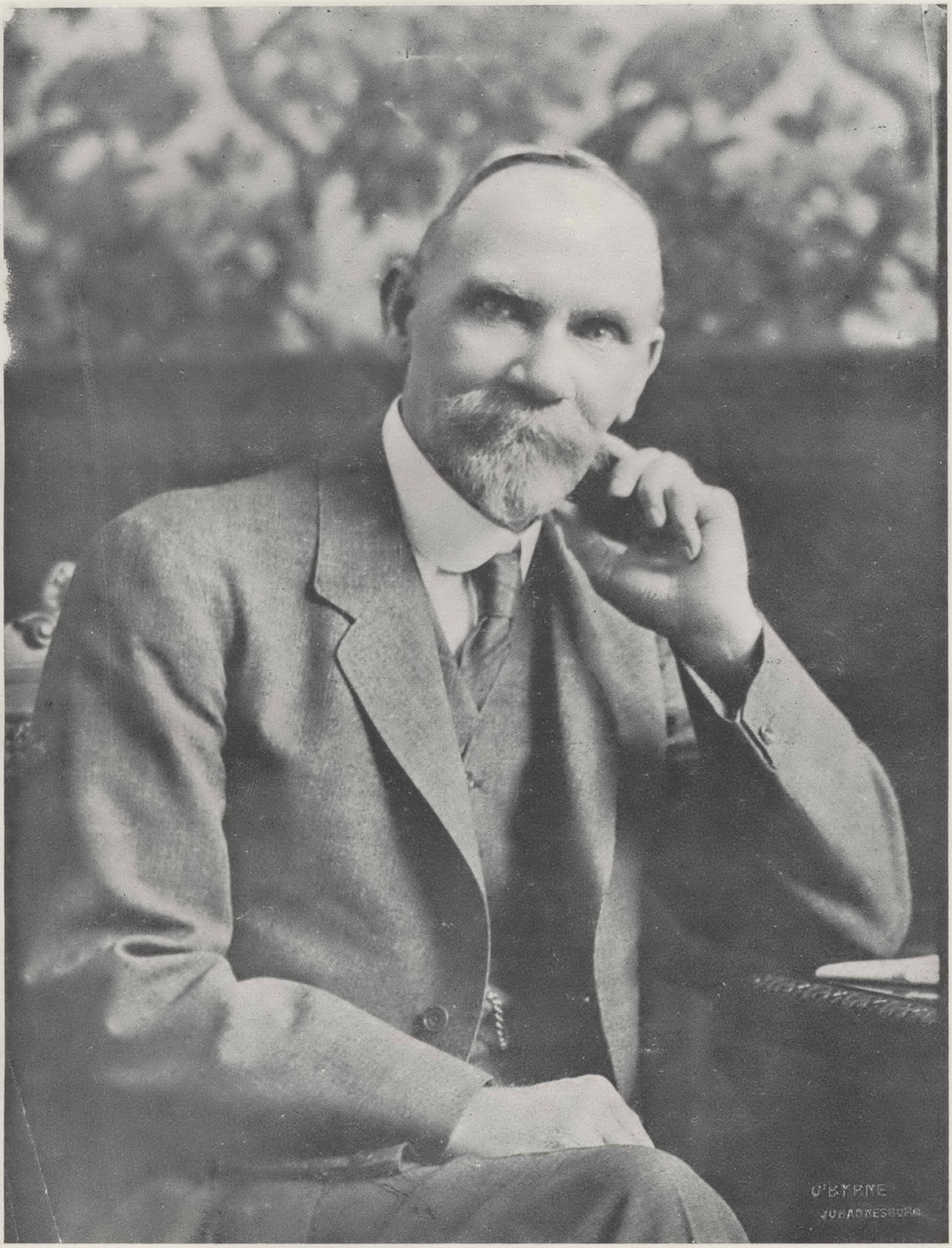
Quarterly Meetings.

The quarterly meeting of the Association will continue to be held in the Scientific Club, 100, Fox Street, Johannesburg, during the coming year.

Arrangements have been made for these meetings to be held on 15th May, 14th August, and either the 13th or 20th November, each of these meetings will be preceded by dinner in the Club dining room, thereafter Messrs. Ernest M. Powers, Harold Porter and Gordon Leith will deliver lectures on the respective dates in priority of order.

Due notification of these functions will be made by circular. Members are asked to reserve these dates, and to make a point of being present.

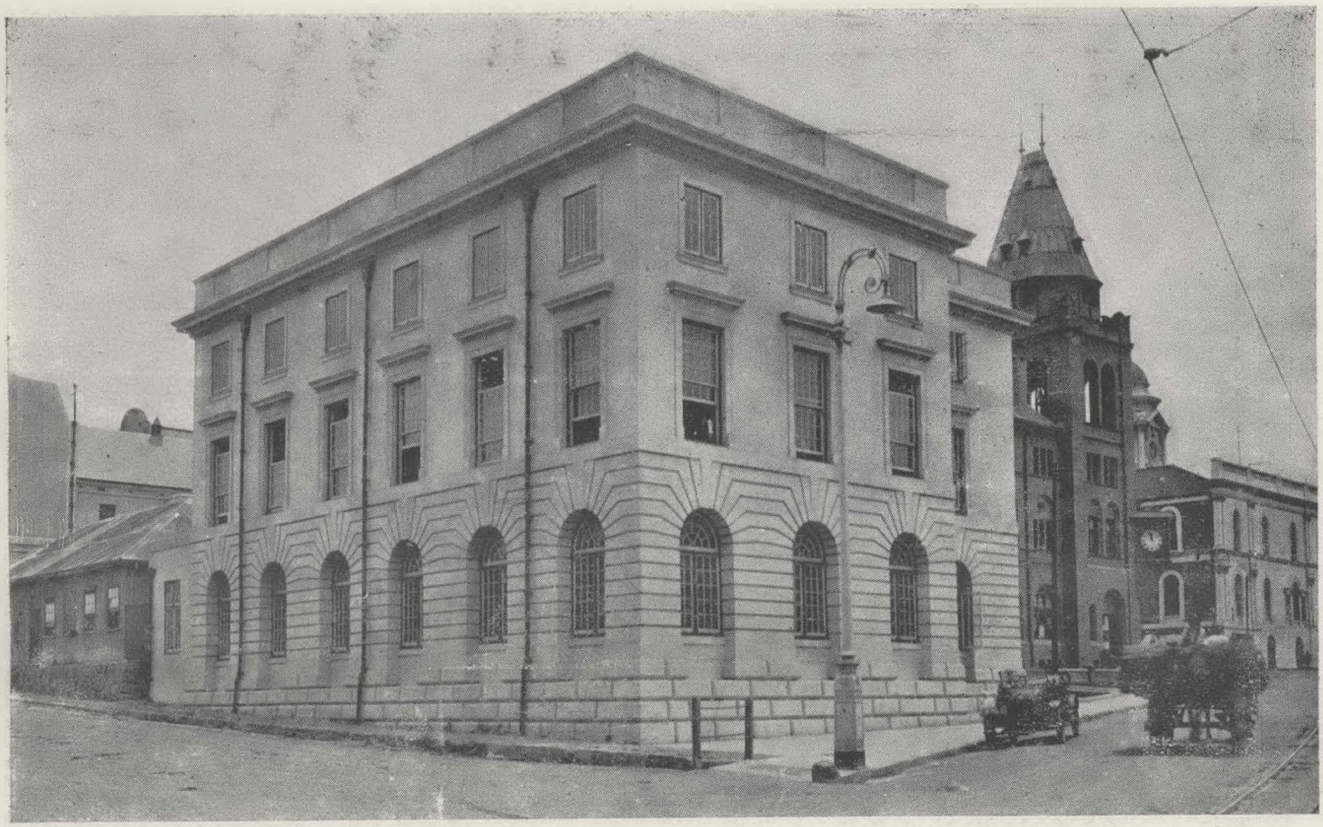
Ladies are specially invited to be present at these dinners and lectures.



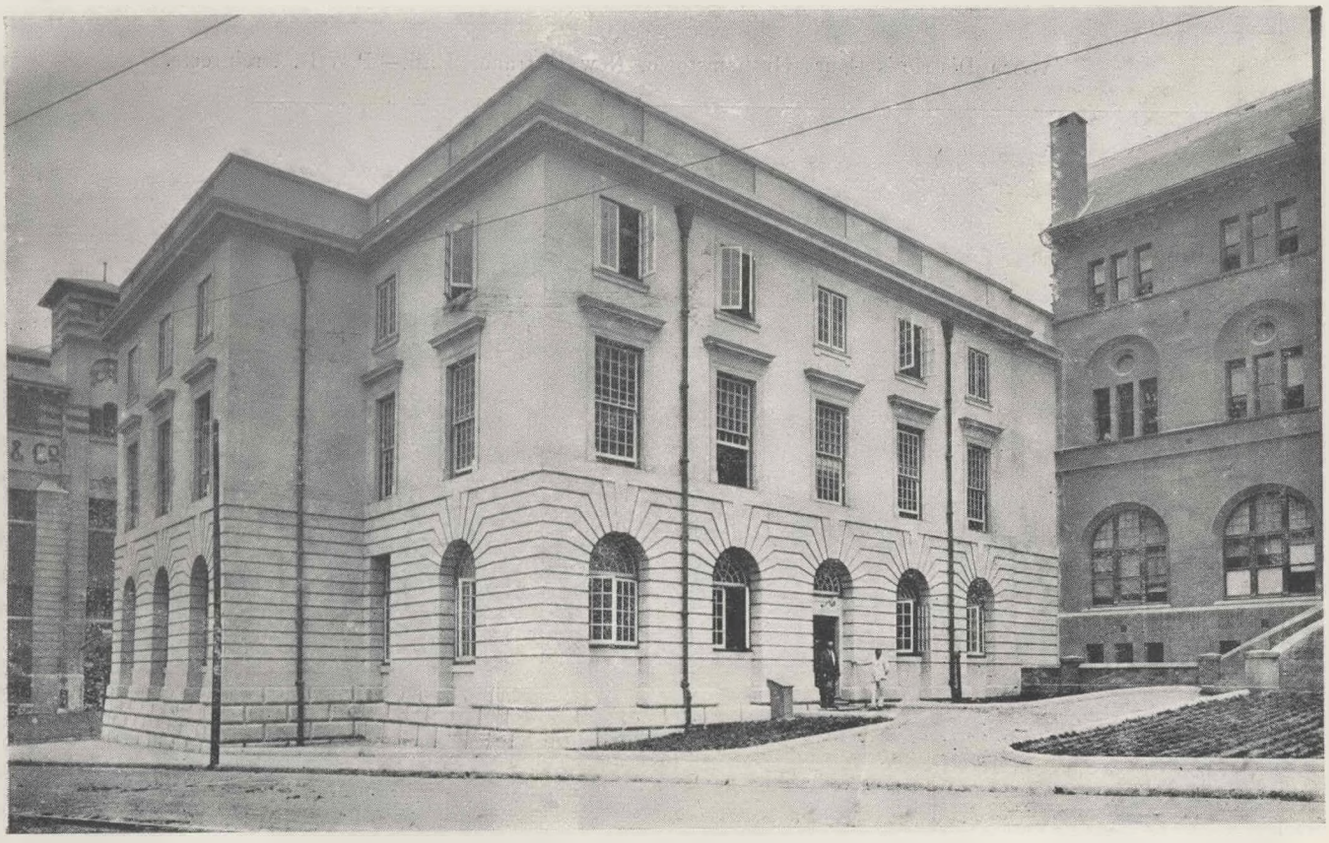
Mr. John S. Donaldson.—Our President for 1922.



The Eastern District Court Grahamstown.—P W.D Architects.



New Telephone Exchange, Port Elizabeth. Front Entrance.—P.W.D. Architects.



New Telephone Exchange, Port Elizabeth —P.W.D. Architects.



Eastern District's Court Grahamstown, New Entrance Hall.— P.W.D. Architects.



The Administrative Block, New Hospital, Port Elizabeth.—P.W.D. Architects.

The Agregates.

By G. W. NICOLAY, F.S.Arc.

The accident of Architecture, that is, the features which are of arbitrary application and which are most difficult to apply successfully, have been briefly noted as the matrix, and following the same fancy the bulk and weight of buildings may agreeably be treated as the aggregates of which the successful placing and binding together may be called Architecture.

Architecture is twofold, first constructive and then artistic. Constructive in the assembling of its parts and artistic as to the effect or appearance presented to the spectator. And in discussing the relations the mind must be kept alert against confusion of the forms used with the effect produced.

To illustrate this it is only necessary to examine a purely utilitarian feature, one of those openings which in all primitive architecture are used for light and air, and only closed, if at all, by some movable screen, the form of which has had no influence upon the construction, nothing more than a hole in the wall. But so as to get our effects made out clearly the work shall all be smooth and pale in tint and the form flat as to the face of the wall and rectangular as to the shape of the opening, and so placed that the light falls upon it diagonally from above and from one side.

In a bright light we notice first the dark and mysterious warm shadow in the opening next shadows on the underside of the head, the face of the upright side and part of the sill, then the difference between them. First the principal shadow, though not the darkest, that of the opening, warm in tone, mysterious in nature, not uniform but affected by the presence of persons or things about it in the interior. Then the shadows, still warm in tone though more pale than the principal shadow, and last cold and decided, the shadow cast on the sill darker than all. But this is only half the effect, and that part of it which as the light fails soon dies away, first the energy and decision of the cast shadow, then its effect on the warm shadows as they unite and become finally indistinguishable. The other half, the bright one is similar. First the broad bright light on the face of the wall, then the paler light on the flat upright face opposite to the one in shade, and then the brightest light falling on the side in sharp antagonism with the corresponding shadow. But besides this the lights and shades, according as the surface is affected by them, are more or less luminous, affect each other by reflection, becoming paler and warmer or cooler according to the tone of the surfaces reflecting the light. And further if any colour is placed so that the light parts of the windows can give a reflection of it, the whole effect will be modified by it.

This very simple example will serve to indicate that much complex work may be done by the skilful use of the essential structural parts of a building without the introduction of any artificial details, such as have always been customary since the days enveloped in the grey mists of antiquity, when in the Nile Valley the Egyptians began to give us examples of regular Architecture.

Now the foregoing simple piece of analysis is given to show how complex and difficult the practice of art is, and always must be, though not more difficult in Architecture than in any other art.

Returning to the example it is necessary to add that is was taken out of place as a means of getting the simplicities of light and shade into a compact sample for the purpose of easy demonstration. Anyone can test it for himself who will take the pains to study such a simple piece of work with sufficient care and patience.

And so to begin again with the weight and bulk of the building, though with this it is necessary to avoid going far afield, because the range of examples is so great and so diverse that it would be difficult to avoid confusion.

Let us return to the Greek Temple as a convenient type for examination and sample in general arrangement.

The space enclosed for the more sacred rites it was constructed to serve had only one opening at each end, a large door and surrounding this windowless building is a space roofed in but otherwise fully exposed to the weather. For the mere structural necessities it would have been sufficient to use columns half the size and twice as far apart and to have used square piers instead of columns, and the remainder wrought out in as crude a manner. Had this been done in building the Parthenon, however magnificent the subsequent treatment, it would never have acquired the admiration of artists which it has received

for centuries, ever since, that is when it first became known to the modern world.

This example has been continually referred to because though a building on which no expenditure was considered too great there is no appearance of licence, all is nobly ordered, constructed and finished, so that it would be rash to assert that there was an effort of excess or default in it.

The portico surrounding this simple structure is arranged so as to produce a rythmical alternation of light and shade, yet with a movement so restrained as to be active but not obtrusive. The inter-columnation is about two-thirds greater than the diameter of the column and the light and shade in consequence well balanced. The other proportions of the building are devised with the same moderation and reserve. The pediments, though intended to enshrine the best sculpture obtainable, and which has never been surpassed, are kept moderate in pitch so as not to disturb the skyline, or conflict with the quiet dignity of the general mass.

The building is wrought to a smooth finish and has, like the example analysed above, the advantage of brilliant reflected lights. A similar analysis of them even in a small section of the building would require more space than is here available for the whole subject under notice and the examination of the details designed to make the most brilliant and definite use of them would require much more. But the shining walls of the enclosed portion were kept plain no doubt for that very purpose, together with the pavement and the ceiling. When the sun was low a large part of the walls was in full light not many degrees less in strength than that falling upon the pavement and hardening the edges, paling the masses of the great shadows thrown by the portico and assisting the light gathered from without until the light had gained strength to place in a suffused setting of silver grey the band of noble sculpture at the head of the wall. Great breadth, dignity and unusual purity in combination with surpassing brilliance. Or looked at from the other side, one great cast shadow the whole extent of the building upon which it seems to stand, the whole of it in the pale light gathered from the sky and the effect less brilliant, but with unimpared beauty and an added solemnity and dignity.

These general effects are all obtained by the management of the aggregates, not set out just to suit the necessities, the practical requirements of those who were to use it, but going far beyond that, devised from the first to support and enhance the value of what was expected confidently to be perfect sculpture.

Looking at the end of the building quite a different use of the masses is apparent. The doorway having a width of about a quarter of the length of the wall leaves a surface too restricted for that treatment to be effective. Here another row of columns is introduced and the whole made vertical instead of horizontal When the sun is low the shadows falling on the second row of columns and even on the walls produce a charming effect of light and shade about the great portal, changing as the sun moves up and to one side, giving simple but varied light and shade still affected by the reflections, and in the reflected light about the heads of the columns, their capitals which though plain are exquisitely designed, give added interest to the composition. The open portal and artificial light within add mystery and perhaps attract the eye to the great statue of ivory and precious metals which stood at no great distance from the entrance. The whole kept entirely subordinate to the great tympanum within which was a collection of sculpture only less wonderful than the statue just referred to. The disposition of these masses is so well devised and the balance of light and shade so well maintained that without any moulding or enrichments a remarkable and impressive piece of architecture would have been achieved, well worthy of study even at the present day. This preliminary part of the work formed a brilliant light and shade effect upon which was to be added the sculpture and afterwards the colour. Although preparatory to a finish extraordinarily rich and bright, the minor masses are unobtrusive, the cornices of no great projection, and all with but few members, and the columns have simple capitals, but no bases.

The sculpture which was to be enshrined and accentuated by this preparatory work was chiefly to represent myths of Athenian worship and the pan-Athenaic procession.

The brilliance of the general light and shade effect assisted the sculpture by contrasting the broad pale lights on the bodies of the human figures, with the bright scintillating lights and sharp shadows of the moulding, and which were all designed for this purpose. This is particularly noticeable in the columns which are fluted and in consequence lose the soft effect of the simple cylindrical form but gain a richness quite foreign to it, and secure that sharp cast shadow so useful when brilliance is aimed at.

Enough has been set down to show how vital to the ultimate result of the work the initial disposition of the masses always must be, and though a building perhaps the most perfect ever executed has been taken to illustrate successful management of the masses of a building, there are plenty which if less perfect are excellent studies for those who have a mind to profit by the examination of the methods of working adopted in the great ages of Art.

Law Report.

Architect's Action for Fees.

In the Court of Appeal (before Lords Justices Bankes, Scrutton and Atkin), the case of Smith v. Wood & Razelaar, Ltd., was recently heard upon the appeal of the plaintiff, Mr. C. W. Smith, an architect, practising at Gray's Inn Square, W.C., from a judgment of Mr. Justice Greer in the King's Bench Division.

Mr. Disturnal, K.C., and Mr. St. John Field appeared in support of the appeal; and Mr. J. F. P. Rawlinson, K.C., and Mr. Dodd represented the respondents (the defendants).

Mr. Disturnal said Mr. Justice Greer had given judgment for the defendants with costs and disallowed the plaintiff's claim, which was for architect's fees for preparing plans of a proposed building for the defendants in Gray's Inn Road. The defendants were a firm of Printers, and in the autumn of 1919 they were in negotiation for a site in Gray's Inn Road for the purpose of building thereon a factory for printing and to accommodate certain heavy machinery. Defendants instructed the plaintiff to prepare the plans for that building, which he did. The reason the judge had decided against the plaintiff was because defendants had told plaintiff that they were not willing to spend more than £20,000 on the building, but when the whole of the plans were prepared and the quantities got out by a quantity surveyor (for which the plaintiff took no responsibility), the lowest tender came to £32,000, and in those circumstances the judge said the plaintiff was not entitled to recover, because as he (the judge) put it, the plaintiff was only instructed to prepare plans for a £20,000 building, whereas the plans he prepared were for a building which could only be erected for £32,000. It was admitted that the plans which the plaintiff prepared were in pursuance of the defendants' instructions and that they were for a building exactly of the character the defendants desired, and it was not suggested that in making the plans anything was done which would make the building more expensive than was necessary. Mr. Justice Greer had said it was almost common ground between the parties that as matters turned out a building of that character could not possibly be erected upon that area for a sum of £20,000, and he also held that the plaintiff had told the defendants that it was unlikely that a building of that character on that site could be erected for £20,000. Nevertheless, the judge had held that the plaintiff was not entitled to recover He (counsel) contended that the plaintiff was entitled to recover unless it could be shown there was something in the nature of a warranty or undertaking by the plaintiff in the contract that the building for which he had prepared the plans could be erected for that sum of money. The question depended upon the exact meaning of the contract made between the parties. In the present case it was a verbal one, and there was a good deal of conflicting evidence on both sides with respect to it. Mr. Justice Greer had heard and decided another action, which was by a quantity surveyor employed by the plaintiff on behalf of the defendants to get out the quantities in accordance with the plans. Defendants defended that action, but the judge gave judgment for the plaintiff in that action on the ground that Mr. Smith (the plaintiff in the present action) was authorised to give the instruction to the quantity surveyor on behalf of the defendants. He (counsel) contended that the judge had misdirected himself, and that upon his findings of fact as they stood and the evidence the plaintiff was entitled to judgment. What the plaintiff was instructed to do was to prepare plans of a particular kind and to keep down the expense as much as possible. He submitted that for the defendants to succeed they must show that they made it a special condition with the plaintiff that he was not to be paid if the cost of the building to be erected in accordance with the plans exceeded a certain amount.

Their lordships, without calling upon counsel for the respondents, dismissed the appeal with costs, holding that they could not interfere with the findings of fact of the judge and the conclusion he had come to.

Vaulting as Applied to Domestic Buildings.

By GORDON LEITH, M.C., A.R.I.B.A.

It is not without a little anxiety that the suggestion of an alternative to the stereotyped method of building dwelling houses in South Africa is made. Already so much has been done towards promoting the use of the 11 in. hollow wall, the ½ brick partition, the matchwood roof and its galvanized iron covering that the principle of construction which the use of such materials involve, has become standardised, and accepted as the most reasonable method of building.

Nor is it anticipated that the theory of substituting brick and concrete for wooden roofs should find immediate favour; on the contrary it is more than probable that even if the architectural profession recognise the benefits of the alternative, it would be some time before the public could be converted.

For the present it may be well to bear in mind the possibilities of a departure on the lines to be suggested, and to work collectively towards the realization of a more permanent, and more suitable, method of building.

If the type of house which to-day is being designed, and built, for the client of modest means could be subjected to analysis, it would be found that whole principle of construction devolves on one essential and that essential is imported timber. The style (if we are justified in calling it such) is therefore exotic, and can have no lasting influence on the architecture of the country. Already it has passed through every conceivable stage of development, and so far as its architectural possibilities are concerned, is exhausted.

Its popularity in the past has largely depended on the assumption that it was the most inexpensive way of building, and one that gave both architect and builder the least amount of trouble; but for the fact that 99 per cent. of the timber used in the building trade is imported, this assumption would hold good, but it is here argued that a method of building that costs the country concerned well nigh three millions a year for the importation of one of its essentials alone cannot be regarded as such, in every respect.

The following figures obtained from statistics kindly provided by the Scientific and Technical Advisor to the Union Government serve to indicate the extent to which imported wood is being used in this country:

Wood and Timber Imports and Re-exported, 1920.

Wood and timber unmanufactured	£2,165,072
Less re-exported	29,043
Total	£2,136,029
Flooring and ceilings	£531,797
Less re-exported	Nil.
Total	£531,797
Other, planed and grooved	£47,759
Less re-exported	5,801
Total	£41,958
Wood manufactured	£689,527
Less re-exported	23,816
Total	£665,711
Grand total of imported wood consumed in Union during 1920	£3,375,496

Thus in 1920 no less than three million three hundred and seventy-five thousand four hundred and ninety-six pounds left South Africa and went towards the promotion of afforestation, and other industries in foreign countries.

The contention here put forward is that the bulk of this timber is not essential to the building industry and that by mutual collaboration it will be possible to build more permanently and more economically with the materials that nature has placed at our disposal.

Although the Union's supply of timber is limited, she should, with proper afforestation, and provided discretion is exercised in the uses to which it is put, be able to provide the whole of her own requirements. The experiments carried out in connection with the seasoning of indigenous woods by the S.A.R. and Harbours under the direction of Mr. Eckbo, encourages the belief that the local woods are equal, if not superior to, many imported varieties, and that

it is only a matter of time before the prejudices which even our official horticulturalists appear to share with regard to the cultivation of indigenous trees will disappear.

Already statistics show that in 1919-20 South African timber to the value of £43,811 was exported, and that during the same period £473,914 worth was consumed by local industries.

For the present, however, an endeavour must be made to reduce the carpenter's bill to a minimum, and every possible use made of those materials, such as Portland cement, lime, sand, building stone, granite, clay, asbestos, pigment, metals of all descriptions, and the incomparable variegated marbles, and hardwoods, that South Africa produces.

Should a venture on the selines be contemplated, it will be well to consider the development of architecture in countries analogous to our own. Those, for example, that are subjected to similar climatic influences, and where the geographical and geological conditions are of a corresponding nature; the inevitable result of such a survey would be the relegation of Northern European methods for those of the East, and the selection of Italy, Greece, and Egypt, as the zones where architectural development has matured under conditions such as prevail in the various Provinces of the Union.

No country could hope to be more fortunate; the world's finest prototypes are thereby placed at our disposal and the South African architect is free to revive and remodel them according to local conditions and modern requirements.

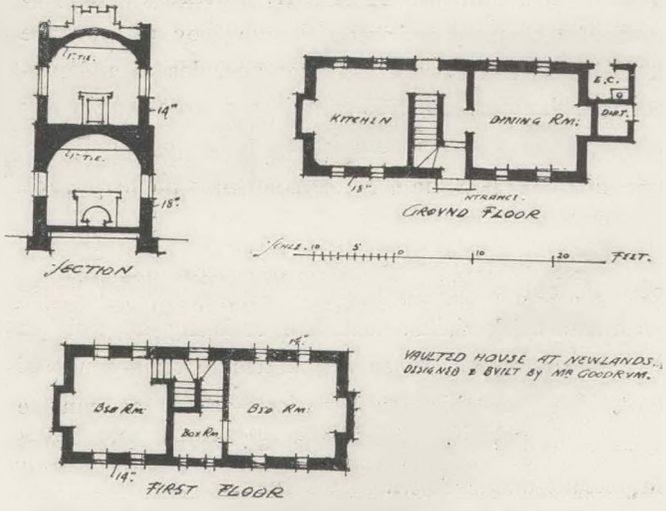
No one was more alive to this analogy than Cecil Rhodes: In sending his able desciple Herbert Baker to "Rome, Paestum, Agrigentum, Thebes, and Athens," he displayed a remarkable insight into the architectural needs and possibilities of South Africa, and set a precedent which it is hoped will continue for the lasting benefit of South Africa. In 1911 the torch of classic study was handed to the writer by virtue of the scholarship founded by Baker, and it is largely due to observations made during two delightful years in Italy and Greece, that the possibilities of departing from the hitherto accepted rule has occurred.

Above all, that which strikes the student of classic architecture is the extraordinary similarity between the building conditions of this country and those of Greece and Rome. He is impressed with the degree of science involved in the creation of great works of art, and the conviction grows that sentiment, and inspiration, however essential, are speechless unless they are accompanied (consciously or unconsciously) by the grammar of line, mass and form, the geometrical co-ordination of parts, and the many other technical factors that constitute the silent language of the Artist.

But the science of building in ancient times was not restricted to the ethetics of art alone. In methods of building, especially in Rome, it accounts for the invention of carefully studied principles of construction, eminently more efficient, and more economical, than those to which trades unions limit us to-day. Methods also which are particularly applicable to South Africa, and which in the course of time are almost bound to make their appearance.

In these references to classic methods it is necessary to admit the inclusion of the Italian Renaissance with a certain amount of reserve. It is natural that the more superficial elements of Roman Architecture should present themselves to the Renaissance builders, and that the result of their application to Gothic and Early Christian forms gave rise to an expression of classic art in which the features rather than the great principles were involved.

Assuming that no extraneous influences had been brought to bear on the development of Architecture in South Africa and that the country had reached its present state of industrial development, what form of Architecture could we expect to find? There would be no deal, teak, galvanized iron and other imports of any kind. The only alternative would be the Dome, Vault and flat concrete roof. If this contention is accepted the rest will decide itself. Should there be some who are doubtful, it may be as well to draw attention to the dome which, according to a reliable informant, was designed and built entirely by natives at Piet Retief.*



Plan of first vaulted house designed and built by Mr. Goodrum.

*Mr. Moerdijk, who drew my attention to this fact, is endeavouring to obtain measurements and a photograph of the cupola, these when available will be published in due course together with any further information which he is able to obtain.

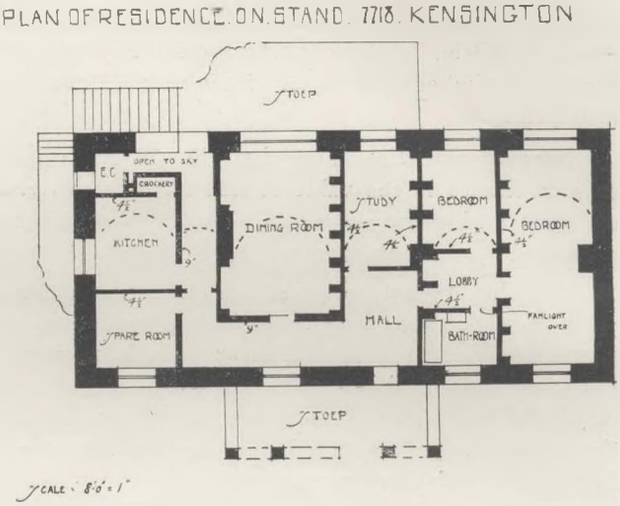
It is further an interesting coincidence that the first man to build a vaulted house in Johannebsurg should be a young bricklayer whose misfortune it is, never to have been out of South Africa. We may assume therefore that the keynote of Eastern building methods has been struck naturally, and unconsciously, and that we are at liberty to accept them without prejudice as the basis of our National style.

Mr. Goodrum admits that his first experiment in vaulting was due to the scarcity of timber during the war. His first attempt (Fig. I) involved the construction of a double storied cottage, consisting of superimposed barrel vaults, the lateral thrusts of which were taken by the outside walls; of these the ground floor walls were 18 in. thick, and the first floor walls 14 in. thick, additional resistance being further provided by the introduction of wrought iron ties.

In his second attempt (Fig. II) a larger and more complicated structure is involved. In this case the designer dispenses with the use of metal ties, and relies entirely on the thickness of walls for the conversion of thrust. Many of the walls, as will be seen from the plan, are unnecessarily thick, those for example that occur at right angles to the barrel could profitably have been reduced, as well as some of the internal walls. Otherwise the drawings of Mr. Goodrum's houses speak for themselves, and although they may not be regarded as examples of architectural design and proportion, they nevertheless contain a germ of originality which, if fostered, should have a lasting and far-reaching effect on the architecture of the country.

Looking at the proposition from the point of view of cost, one would naturally expect a vaulted house with its thick walls, and fire resisting as well as hygienic qualities, to be impracticable on account of cost. In fact this consideration—as far as can be seen for the moment—appears to be the most important one with which we have to contend.

In order to put this question to the test, the writer in designing a house for a client in Westcliff drew up alternate schemes of ostensively the same house—one vaulted, and the other constructed on the normal

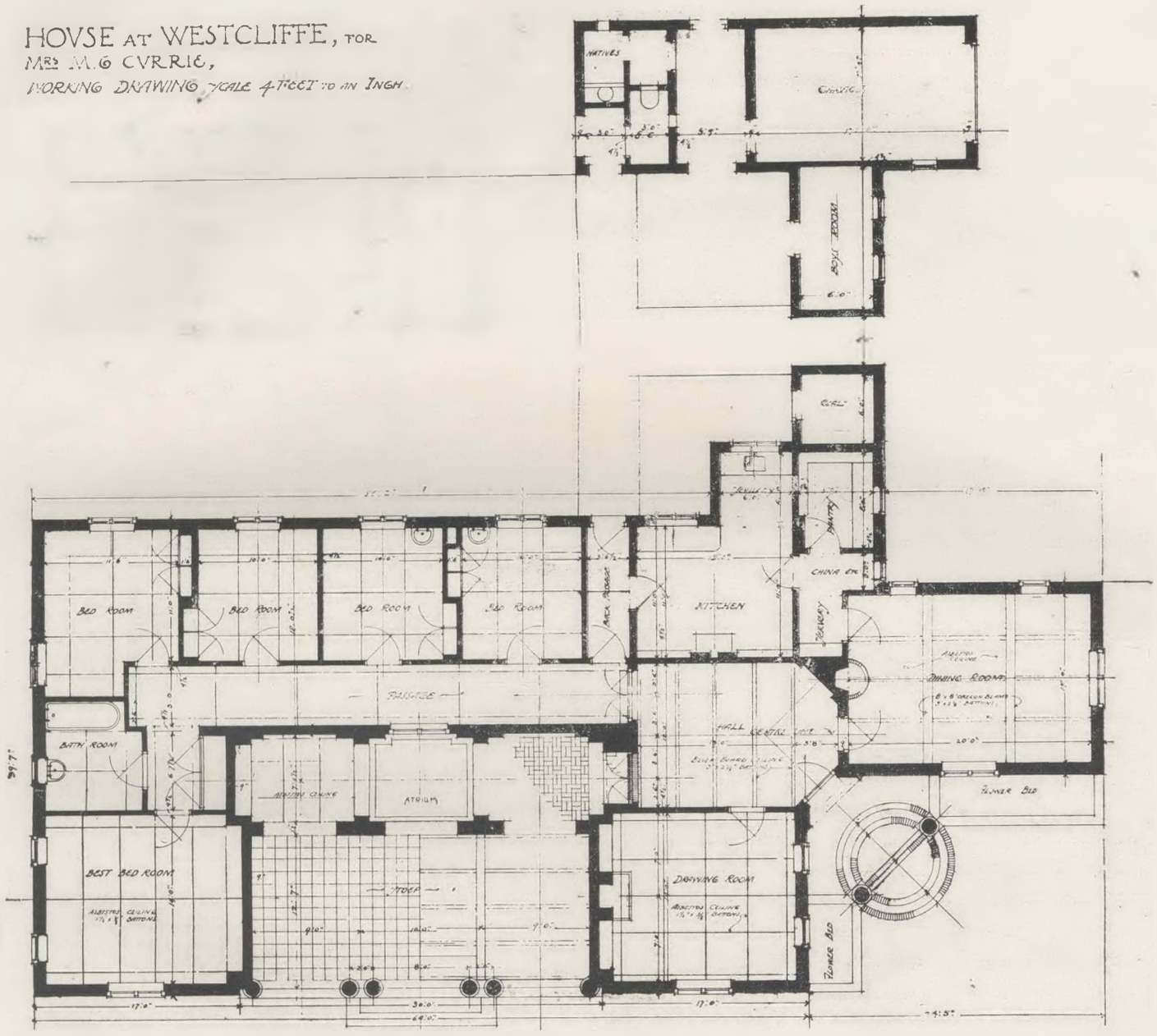


Plan of second vaulted house designed and built in Kensington by Mr. Goodrum.

method, and submits with all humility, the results of his experiment:—

Referring to the illustrations: Figs. III and V presents the plan of a house arranged to comply with certain definite requirements as regards orientation and disposition of apartments. This plan (which for the purpose of reference we will call scheme No. 1) is provided with a Marseilles tile roof with trusses of 1½ in. x 4½ in. deal at 2 ft. 3 in. centres. All walls were specified to be of 2nd quality machine pressed bricks R.I.B.A. standard size, running 4 courses to a foot. External walls were 11 in. with 2 in. cavity. Internal walls 4½ in. thick, ceilings—except those of dining room and stoep—were of imported asbestos sheet fixed to bandering and fitted with cover fillets over joints. Dining room and stoep had 6 in. x 8 in. oregon beams and 2 in. x 3 in. bearers. All joinery was purpose made; wood floors were oregon throughout, the floors of kitchen, bath room, and outbuildings, being of granolithic. In this case the roof of the garage was taken in galvanized iron, those of outbuildings were ⅞ in. boarding on 2 in. x 3 in. bearers covered and flashed with three-ply malthoid. This also applied to the roof over the stoep, a portion of which, however, was tiled.

The plan of scheme No. 2 (Figs. IV and VI), represent the same house adapted to the vaulted principal of construction. The walls are considerably thicker than those in the preceding illustration, varying



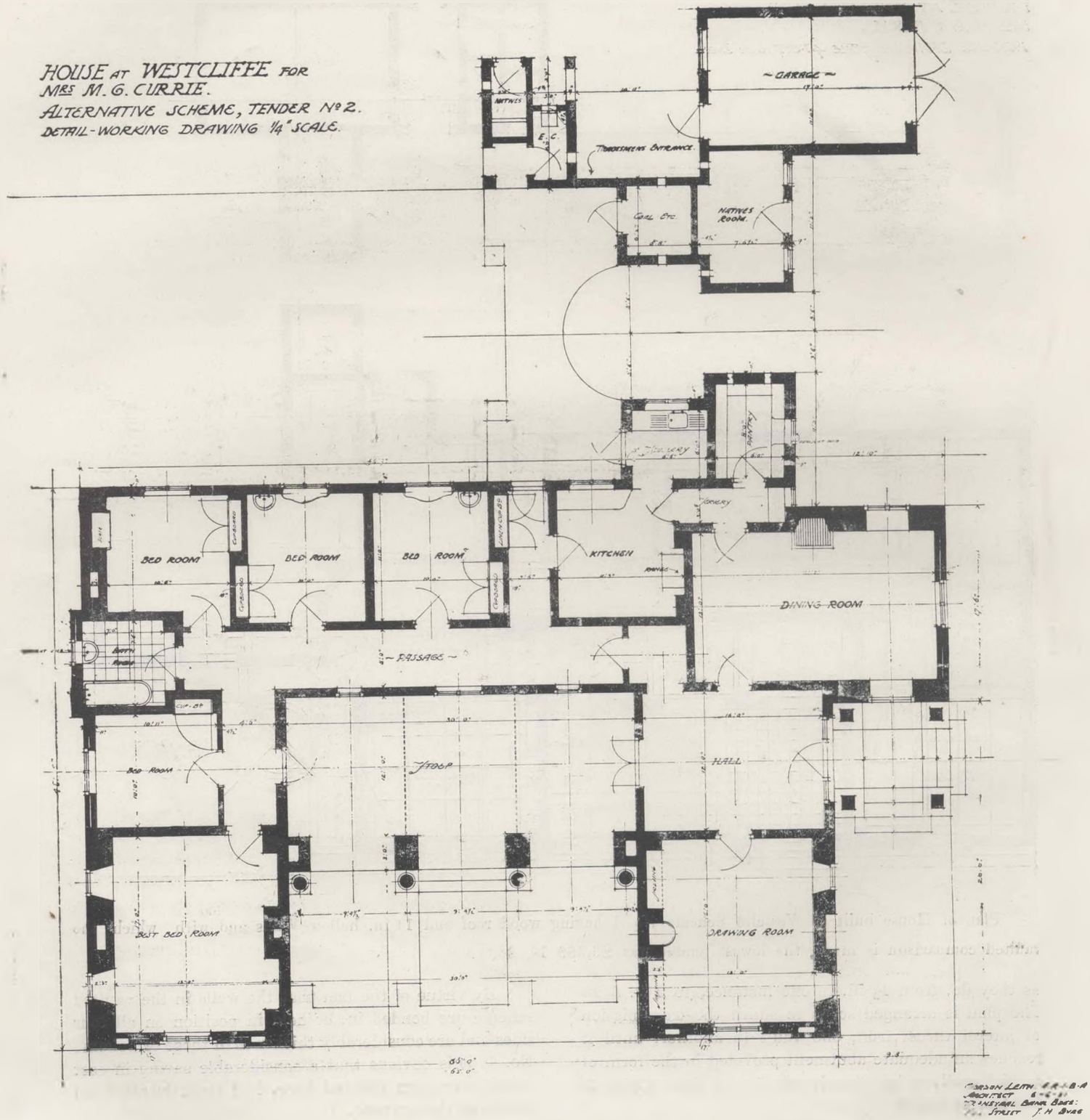
Plan of House built at Westcliff Scheme No. I having wood roof and 11 in. hollow Walls and with which the vaulted comparison is made, the lowest tender was £3,389 1s. 2d.

as they do, from 4½ in. in one instance, to 2 ft. 3 in. The plan is arranged so as to admit the transmission of lateral thrust from one vault to another, until it reaches an adequate abutment provided in the form of a thick wall, or by a vault running at right angles to the line of thrust.

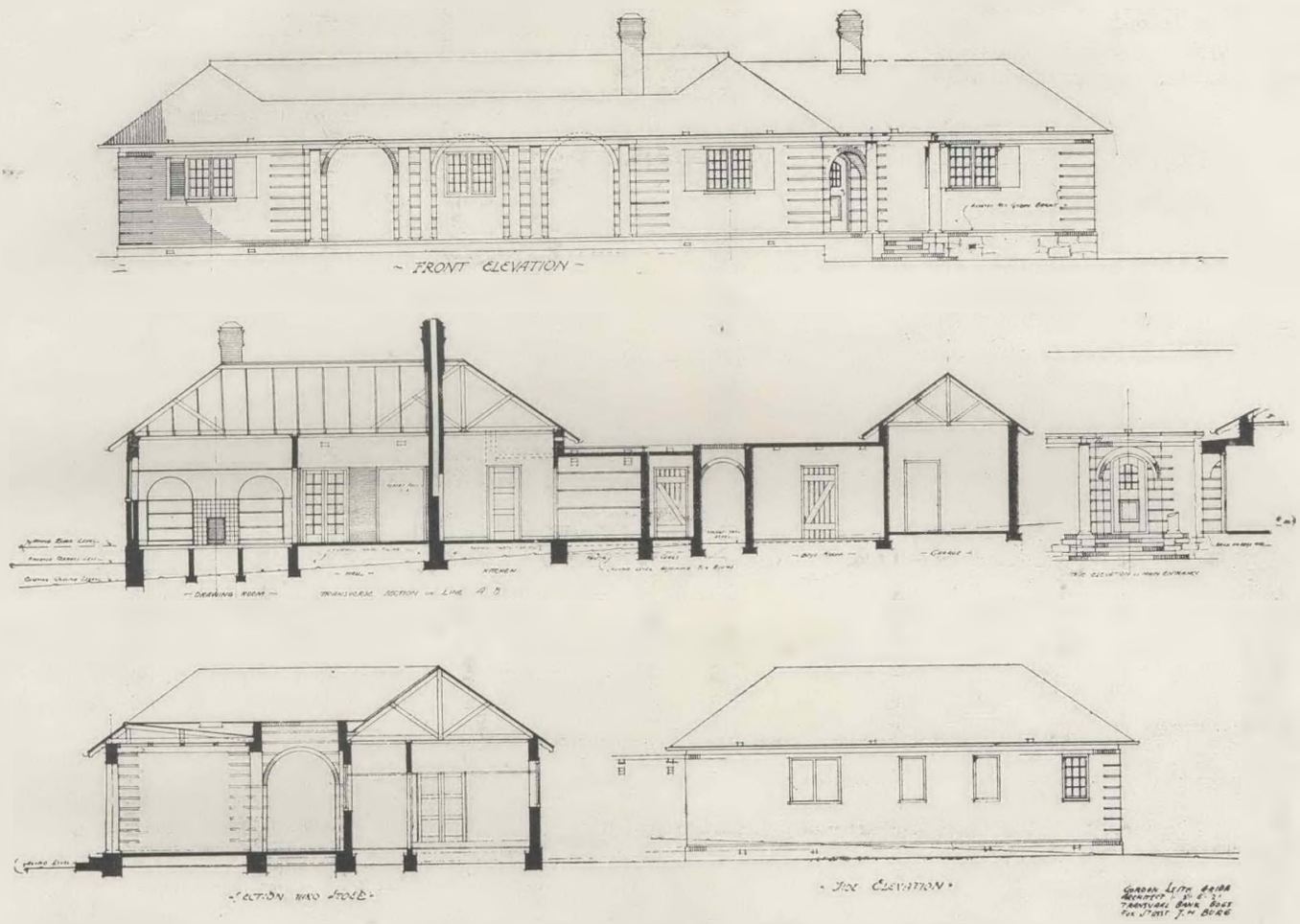
The bricks specified for this design are the same as those adopted for Scheme No. 1, but in this case they were to be embedded in cement mortar.

By virtue of the fact that the walls in the vaulted scheme are bonded in, or held in position on all four sides and are considerably thicker than those of Scheme No. 1, it is obvious that a considerable saving in cost could have been effected here, had stock bricks been answered the purpose.

All apartments, including the covered portion of the stoep were vaulted, with the exception of the bathroom, passages and outbuildings.



Scheme No. 2 Plan of Vaulted alternative, note the thickness of the walls, the lowest tender (not accepted) the whole built in R.I.B.A. standard size machine pierced bricks in cement mortar was £3,363 15s. 10d.



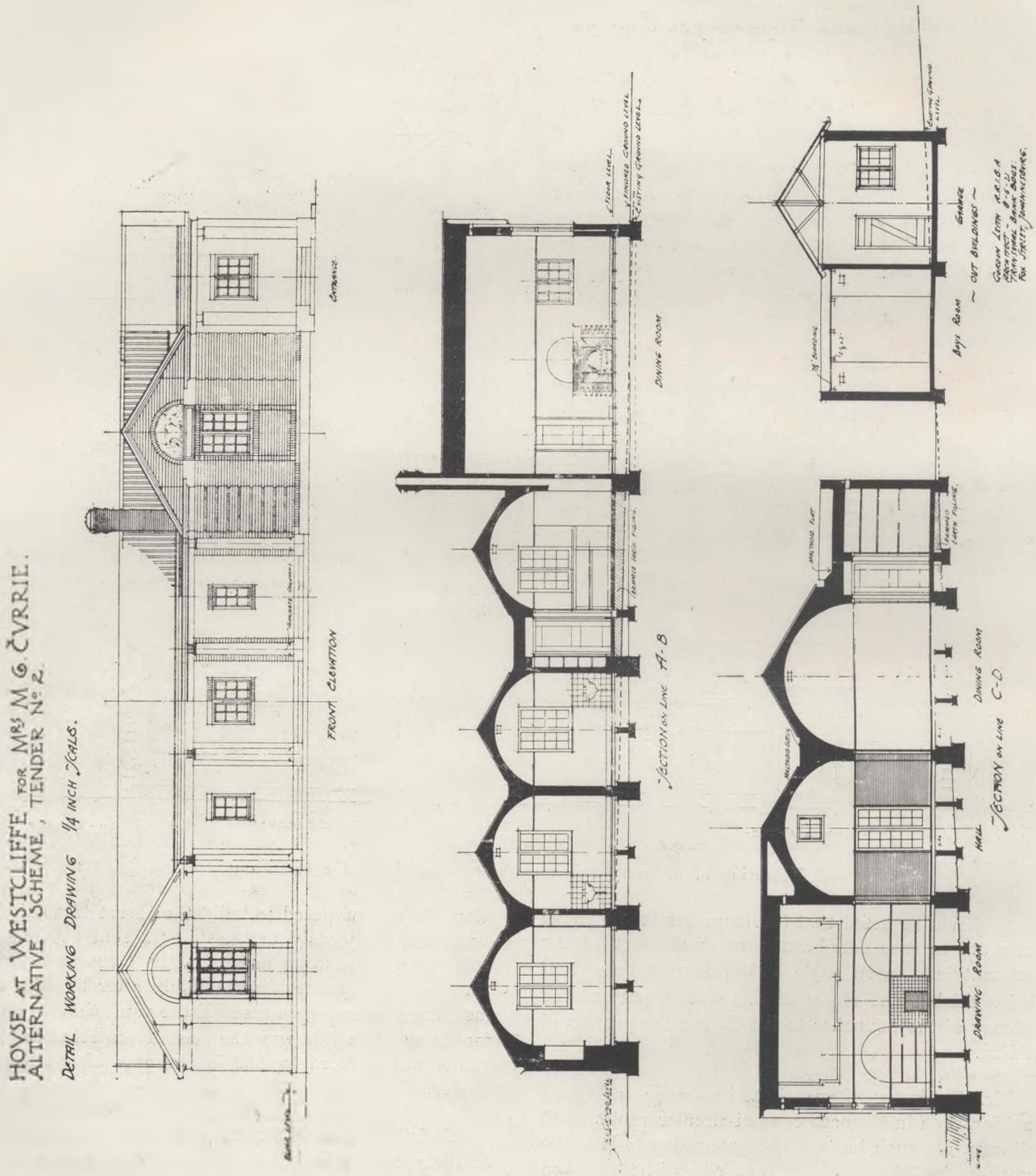
Elevation of ordinary Scheme (No. 1) which was carried out.

It should be noted that the haunches in the larger vaults are in 9 in. brickwork: the remainder of the span contained in an angle of 120 degrees being half a brick thick. The object of this was to prevent the tendency of the haunches to lift during the process of building.

Mr. Goodrum affirms that he made no such provision even in the case of semi-circular vaults of 14 foot span, although he took the precaution to load the haunches as the work proceeded. The method intended to be adopted for centreing the vaults was precisely that which Mr. Goodrum had used. Instead of centreing each compartment entirely, a 3 ft. centre was to be adopted and was to be supported on a plate or oversailing course projecting at the springing to receive it, and from which it could be wedged into position. It was proposed to build the thrust transmitting vaults simultaneously, and to shift the centre after each 3 ft. strip of vaulting had set. Mr. Goodrum affirms that he struck centres immediately after bedding the last ring and that in no case did the vault show signs of movement. In this way the cost of centreing for the vaults was reduced to £60 in the case of the lowest tender.

It is hardly necessary to point out that if building on the vaulted principle became universal the question of centreing would be largely simplified, as builders, instead of destroying a dome or vault centre after it has been used, would keep it in stock for future use. Perhaps a more profitable arrangement would be the establishment of a firm whose special function it would be to procure centres and sublet them to contractors

Elevation of Vaulted Scheme (No. 2)



as required. In this way a vast amount of time, material and labour would be saved and the case of vaulting greatly strengthened. But to return to the particulars of Scheme No. II.

The extrados of the brick vaults are filled out to a straight pitch by light breeze concrete on which Marseilles tiles are bedded in cement mortar, making a thoroughly permanent and water-tight job.

The flat ceilings in bathroom and passages are of breeze concrete 12 in. thick covered with three-ply

malthoid, and are arranged so as to act as the main duct for rainwater, which discharges into 6 in. diam. Hume pipes bedded in the wall on either side of the bathroom. In this way the plumber's bill for guttering and down pipes is reduced from £285, Scheme No. I, to £233 in the vaulted scheme.

The ceilings of outbuildings are the same as those in Scheme No. 1, but in this case the roof of the garage is covered with tiles. The whole of the vaults internally were to be plastered in lime mortar and finished with setting coat of lime putty. The joinery, floors and fittings were identical with those of Scheme No. 1; but in addition the contingency sum was increased by £25 and an allowance of £25 made for sculptured panels.

The moulded cornice shown in the vaulted scheme was a luxury which, for the purpose of comparison could comfortably be omitted whereby a further saving of £30 could have been effected, bringing the total of extras for deduction from the comparative price to £80.

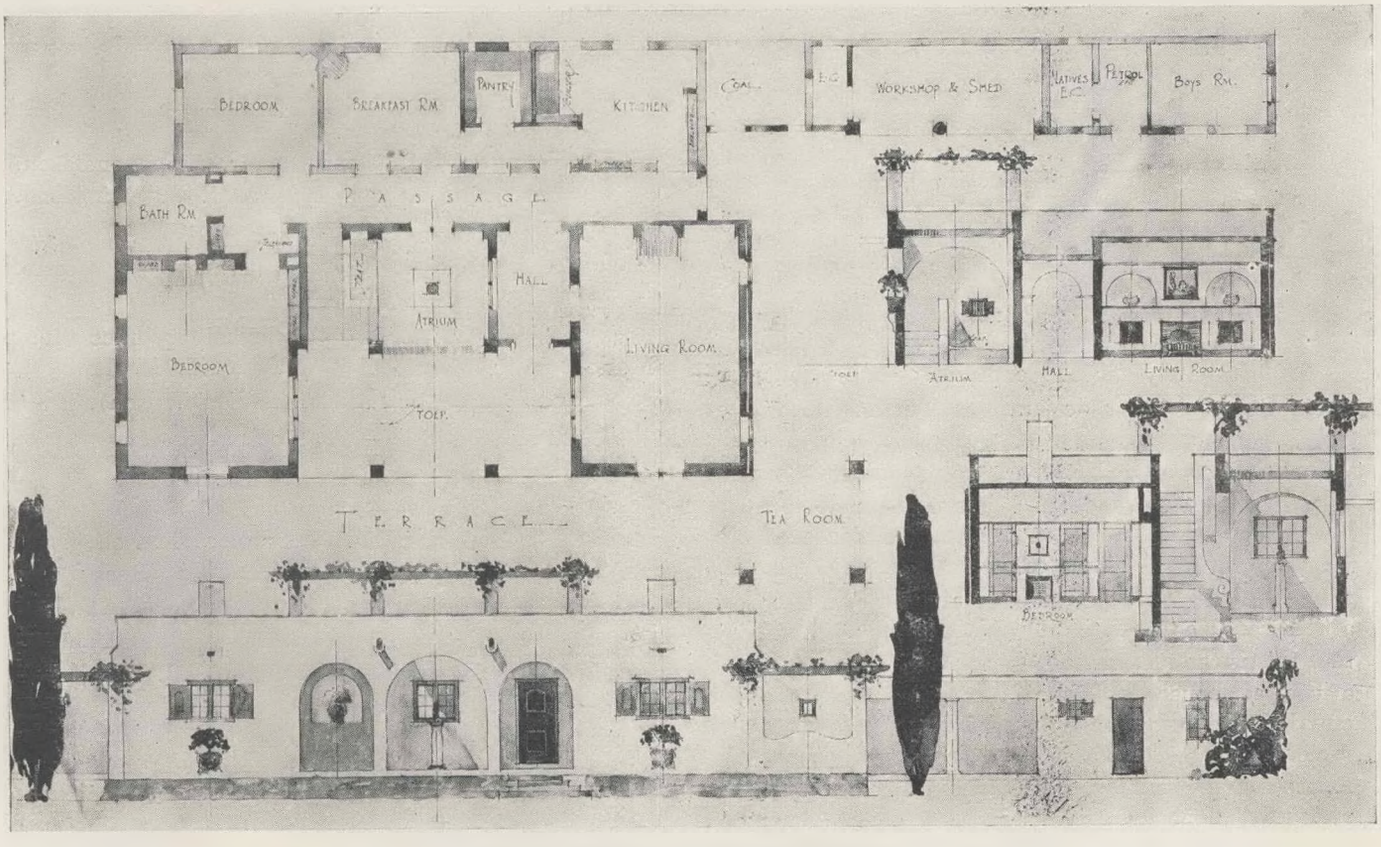
Tenders were submitted on the 25th of June, 1921, as follows:—

	Ordinary Scheme (No. I).	Vaulted Scheme (No. II).
Messrs. J. T. ...	£3,427	£3,377
Messrs. T. D. ...	£3,389	£3,498
Messrs. D. F. C....	£3,459	£3,598
Messrs. C. S. P. ...	£3,550	£3,750
Messrs. J. B. ...	£3,687	£3,675

We therefore find that the vaulted scheme, after making the necessary deduction of £80 and without making a deduction for the class of brick intended to be used, works out cheaper than the ordinary method involving a wood roof.

In order to ascertain exactly where the saving occurs the following comparisons of the respective bills will be of interest.*

*The priced bill of Scheme No. II was handed to me by courtesy of the contractors for future reference and for the purpose of this comparison.



Design of Small Flat Roofed House.

Schedule of Quantity—Summary of Scheme No. II (Vaulted).

Bill No. 1 Generally	£50	0	0
,, No. 2 Excavator, concretor and bricklayer	1,670	6	6
,, No. 3 Carpenter and joiner	630	15	7
,, No. 4 Roof tiler	209	0	0
,, No. 5 Plasterer	220	16	5
,, No. 6 Plumber	233	0	8
,, No. 7 Painter and glazier	155	10	10
,, No. 8 Electrician	120	0	0
	£3,289	10	0
Allow for Quantity Surveyor's fees, 2½ per cent.	82	5	0
Allow for lithography and typing	5	5	0
	£3,377	0	0

Schedule of Quantities—Summary of Scheme No. I (Ordinary).

Bill No. 1 Generally	£46	10	0
,, No. 2. Excavator, concretor and bricklayer	1,226	8	9
,, No. 3 Carpenter and joiner	1.059	0	11
,, No. 4 Roof tiler	239	8	0
,, No. 5 Plasterer	181	0	8
,, No. 6 Plumber	284	15	9
,, No. 7 Painter and glazier	164	1	7
,, No. 8 Electrician	100	0	0
	£3,301	5	8
Allow for Quantity Surveyor 2½ p.c. ...	82	10	6
Allow for typing and lithography	5	5	0
Carry to tender from	£3.389	1	2

Unfortunately for the experiment the client for whom the house was designed decided to accept the lowest tender for scheme No. I, so that the results of a final and completed test are not available. It will be noticed that an endeavour has been made to keep the outward appearance of the vaulted house within the limits of the style in vogue. It was felt that the change should not be too drastic and furthermore that a tiled roof was essential. It does not follow, however, that this is the only method of treating the elevation of a vaulted house, on the contrary the opportunities afforded for introducing roof gardens, atriums and a variety of classic and Eastern features are great. The flat roof suggests itself as a most suitable treatment in a country such as this, and the sketch illustrated, Fig. VII, indicates in a small way what the departure herein advocated suggests.

Officers & Committees for the Year 1922

The following officers and committees have been elected for the current year:—

President: Mr. J. S. Donaldson, F.S.Arc.

Vice Presidents: Mr. F. L. H. Fleming, Mr. Allen Wilson, F.S.Arc., Licentiate R.I.B.A.

Council: Mr. G. S. Burt Andrews, M.I.C.E., M.I.M.E., Mr. D. M. Burton, F.S.Arc., M.R.San.-Inst., Mr. N. T. Cowin, Licentiate R.I.B.A., Mr. R. Howden, A.R.V.I.A., F.S.Arc., Mr. G. Leith, M.C., A.R.I.B.A., Mr. E. M. Powers, F.R.I.B.A., Mr. W. Reid, F.R.I.B.A., Mr. D. M. Sinclair, F.S.Arc., Mr. H. G. Veale, F.S.Arc.

Finance Committee: Messrs. G. S. Burt Andrews, D. M. Burton, D. M. Sinclair, N. T. Cowin.

Practise Committee: Messrs. H. G. Veale, R. Howden, D. M. Sinclair, N. T. Cowin, W. Reid, G. Bromilow, E. M. Powers.

Journal Committee: Messrs. E. M. Powers, E. H. Waugh, R. Howden, G. Leith, G. Moerdijk, G. E. Pearse, H. W. Spicer, G. W. Nicolay, G. Bromilow.

Board of Examiners: Messrs. E. H. Waugh, G. E. Pearse, R. Howden, E. M. Powers, H. G. Veale, P. J. Hill, S. C. Dowsett, H. W. Spicer.

Art and Education Committee: Messrs. F. L. H. Fleming, D. M. Burton, G. E. Pearse, E. M. Powers, G. Leith, E. H. Waugh, H. G. Veale, H. W. Spicer, F. Williamson, T. G. Ellis.

Seymour Memorial Library: Mr. J. S. Donaldson.

Architectural Classes: Messrs. J. S. Donaldson, F. L. H. Fleming, Allen Wilson.

Town Planning Association (Transvaal): Messrs. D. M. Burton, H. G. Veale.

Associated Scientific & Technical Societies Club. Messrs. R. Howden (alternate, Mr. E. M. Powers), J. S. Donaldson (alternate, Mr. Allen Wilson).

Engineering Standards Committee: Messrs. W. Reid, Allen Wilson.

Pretoria Practise Committee: Messrs. W. J. de Zwaan, T. G. Ellis, P. J. Hofman, F. Soff, J. G. Kraan, J. B. Wyers, F. Roberts, V. S. Rees Poole, J. R. Burg, F. G. McIntosh, P. Westmaas.

East Rand Advisory Committee: Messrs. J. F. Mackenzie, J. S. Bowie, John Gibb, C. J. Wickee, W. J. Sloan, P. Rogers Cooke, J. L. Henderson, W. H. Mason, J. M. Anderson, G. Laidler.

The President and Vice-Presidents are ex-officio members of all Committees.

MURRAY K. CARPENTER.
Registrar.

Maritzburg Memorial Arch.



War Memorial Arch, Pietermaritzburg. Ing & Jackson, Durban. Architects.

The War Memorial Arch illustrated above, recently unveiled in the gardens at Pietermaritzburg, was designed and carried out by Messrs. Ing and Jackson, Architects, Durban.

The arch is built of Vlatpan Stone on a granite plinth, is classical in treatment without following a prototype. The modelled detail is carefully placed and each portion carries a symbolical meaning.

"Stele" crests at top of breaks over columns signify eternal remembrance: reversed flambeaux directly under the latter indicate mourning; Springbok heads on Keystones represent the South African Crest.

The Bronze Roll of Honour panels (not yet in position) will be placed on inner reveals of piers; the City Arms occurring on one side and the Springbok Badge on the other. The wording "OUR GLORIOUS DEAD" is incised over each group of panels.

The total cost of the arch, including the Roll of Honour panels, was £2,070.

Rand Refinery, Germiston.—General Description of Buildings.

The buildings comprised under the general term "Refinery" were designed from a sketch lay-out prepared by Mr. R. K. Kahan, now the manager of the Refinery, who has special experience in the refining of gold and silver in connection with mints in Australia and India.

The plant, which will deal annually with a volume of gold equal to about 70 per cent. of the total world's output, is the largest and most complete of for this purpose. The chief feature of the refining processes employed is the use of chlorine which is generated in a building with apparatus specially designed by the engineering staff of the Central Mining and Investment Corporation, Ltd., under Mr. Kahan's instructions.

The extent of ground enclosed by the boundary wall is 5.43 acres.

The buildings include:—

1. Administrative Offices	5,907	sq. ft.
2. Assay Offices	11,490	sq. ft.
3. Refinery and Gold Melting House	23,983	sq. ft.
4. Power House and Workshops ...	6,652	sq. ft.
5. Chlorine Generator House	2,655	sq. ft.
6. Store Rooms, Coal Bunkers, Coke Bins, Switch House, etc.	8,168	sq. ft.
The total area covered is thus	58,855	sq. ft.

The cost, excluding the boundary wall, was about £58,000, so that the average cost per square foot was below £1. This is remarkable when it is remembered that the contract for the buildings was entered into in 1919, when building costs for materials and labour were at the maximum, and the uncertain conditions in both markets at that time made it difficult to prepare reliable estimates.

In order to facilitate the execution of the work, arrangements were made for the company to supply bricks, cement, sand and roofing tiles to the contractors at stated prices. This arrangement worked well, and there were no delays due to want of these materials. The siding was laid down before the commencement of building, and considerable quantities of bricks, etc., were on the site well in advance of requirements.

Wire cut bricks of two quantities were used in the work. The better quality used for facings, with the ordinary struck joint (not weathered), and the rougher bricks for plastered faces. Practically all the brickwork was built with 3 to 1 cement mortar.

Marseilles pattern roofing tiles were used throughout the work; the exception being certain portions of the roof of the assay office where, owing to certain requirements having to be met, corrugated sheeting and flat galvanised iron were employed.

Cement concrete in various forms was used extensively in the buildings. Apart from footings, lintels, etc., laid in situ, pre-cast concrete was used for window sills, copings, chimney caps and covers, door steps, etc. These articles were made in proper moulds on the site, faced up after being turned out of the boxes, and well seasoned in advance. Some difficulty in obtaining good results was met with at the outset of the castings, but after a few pieces had been made and experience gained by the workmen, there was very little trouble in this respect. It was hoped that the "crazing" which so often occurs on the face of cement work might be avoided, but, while many pieces were quite free from this disfigurement, others showed it in a marked degree. Although the methods employed were, so far as ordinary observation showed, identical, there must have been some difference in manipulation of the material, or in its treatment after being turned out of the moulds, which caused minute surface shrinkage.

The photographs and the block plan illustrate the general design of the buildings sufficiently. There are, however, one or two points in connection with the assay office which may warrant brief description.

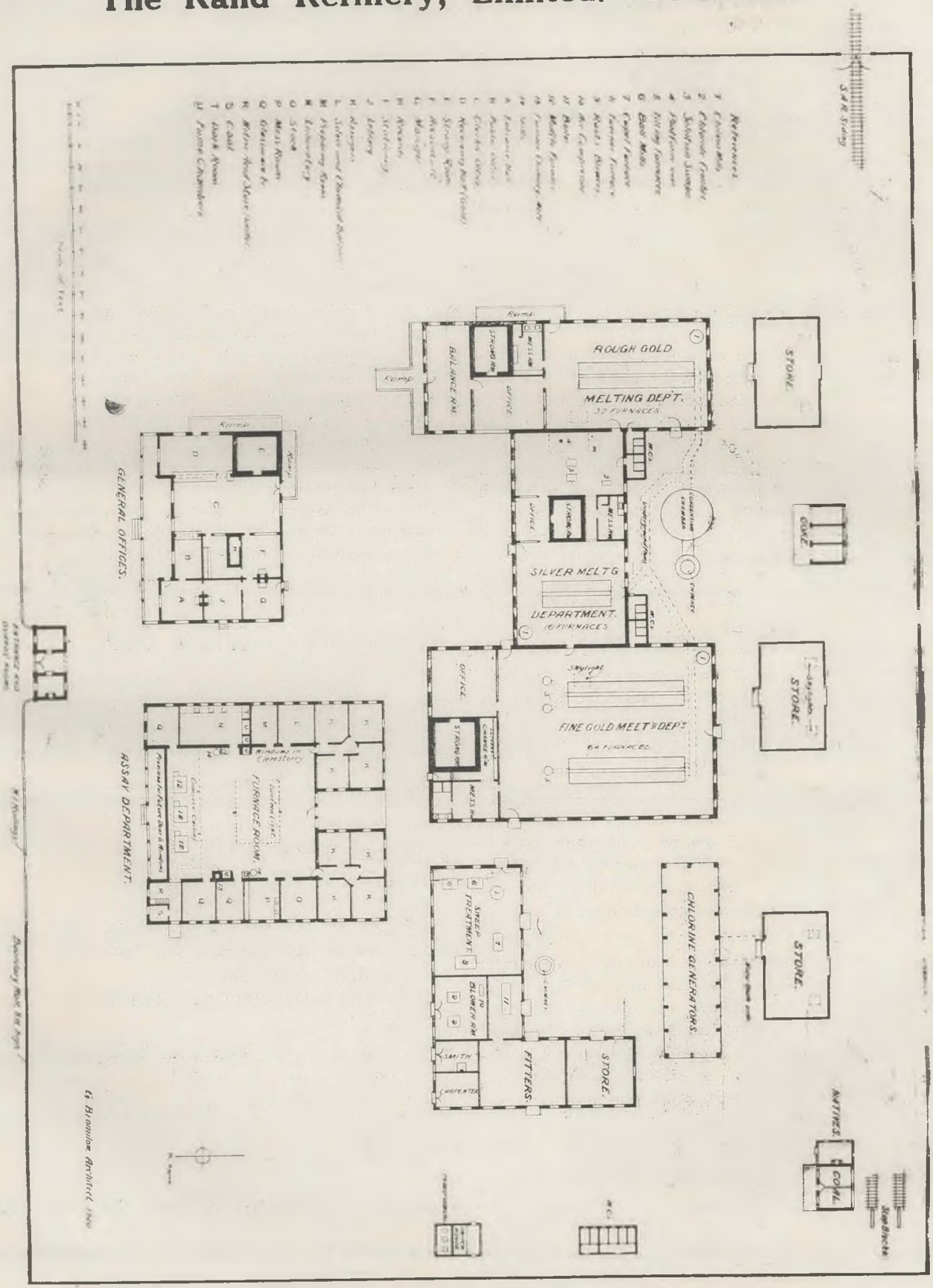
The front elevation presents a rather blank appearance owing to the absence of windows.

It is expected that coal gas may in the not distant future become available for use in the assay furnaces, which now occupy a temporary position in the furnace room. When these furnaces have been removed to a more central position the space now occupied will be converted into an entrance hall and offices.

Openings with lintols over have been formed in the front wall with that object and are filled in with brickwork for the present.

The furnace room, almost entirely surrounded by offices and other rooms, is lighted chiefly by means of the lantern which has a well about 30 ft. and 20 ft. and by 15 windows in the clerestorey. The adjacent rooms are 12 ft. high and the furnace room 19 ft. high. The height to the ceiling of the lantern is

The Rand Refinery, Limited.—Driehoek.



Lay-out Plan of Premises designed and carried out by Geo Bromilow.

35 ft. The roof over the furnace room is constructed with two kingpost trusses bridged over from the apices to carry a flat roof having a rise of 18 inches to the ridge. The inner ends of the trusses are supported on steel joists. The outer ends of which are carried on the walls and the other ends supported on stanchions near the light well. The flues from the fume chambers are lined with 12 in. dia. glazed stoneware pipes jointed with bitumen and are carried up to 40 ft. above floor level so that the corrosive gases shall be well clear of the metal roof coverings. Advantage was taken of the necessity for these fume chamber stacks to make use of one as an exit for the furnace gases, the flue for which is about 2 ft. square. This flue is lined with fire brick.

An interesting feature of the Refinery is the condensing chamber in connection with the gold melting furnaces. This is a brick structure of about 20 ft. internal diameter and 14 ft. high to the springing of the dome which also is of brickwork. The walls are 18 in. thick with inclined buttresses and there is a separate lining of fire brick. The dome is struck from two centres and is of fire brick with an outer cover of common brick. Steel bridging ropes were laid at the springing on the outside face to take up stresses due to the thrust of the dome and to expansion.

The function of this chamber is to cause the precipitation of dust and the condensation of metalic gases so that no particles of precious metals may escape up the large chimney stack. In all there are 115 furnaces served by this chamber and chimney stack. The chimney is 80 ft. high from the intake and has a ruling diameter of 4 ft. 6 in.

As the system of working in the Refining Departments requires that the workmen shall remain within the building during the whole of the working period and as it is not desirable that others than the night patrol men should enter the enclosure at night a water-borne system of sewerage was installed. This includes a septic tank with effluent drains below the ground level, all of which are situated about 100 yds. beyond the boundary wall eastwards.

Ample provision for fire hydrants and water services was laid down.

The architectural work was carried out by Mr. G. Bromilow, who also supervised the construction from the outset until completion.

(Mr. Bromilow desires to acknowledge the assistance of Mr. H. A. Reid in the preliminary design of the Administrative Offices.)

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Notes and News.

Mr. H. W. Spicer has commenced practice at 31, Cullinan Building, Johannesburg, 'phone 4738.

Mr. Charles Hosking has removed his office to 74, Fox Street, Johannesburg.

Mr. Geo. Bromilow has commenced practice at 22, Grosvenor Chambers, Loveday Street, Johannesburg, 'phone 3565.

The third exhibition of pictures and works of art under the auspices of the South African Academy will be opened on the 1st May, in the Selborne Hall, Johannesburg.

Mr. G. Hartog has joined the Executive of the Town Planning Association (Transvaal).

Members requiring either juniors or draughtsmen should communicate with the Registrar.

The following architectural publications are to be found in reading room of the Scientific Club, 100, Fox Street, Johannesburg. "The Architectural Forum," "The Architectural Record," "Architectural Review," "Architects' Journal," "The Builder," "The British Builder," and our own Journal.

Dr. Chas. Porter, M.O.H., Johannesburg, and Vice-President of the Town Planning Association (Transvaal), is on a visit to Australia.

Mr. T. Moore, the well-known quantity surveyor, has removed his Pretoria office to 16, Connaught Building, Andries Street.

Mr. Allen Wilson has removed his office from Sacke's Building to Clonmel Chambers, Standard Bank Buildings, Eloff Street, Johannesburg. Mr. Wilson has been elected President of the Society of Architects (London), South African Branch, for the current year.

Mr. D. Ivor Lewis, who left Johannesburg during the war period and was for some considerable time attached to the Housing Ministry, has returned to South Africa and contemplates opening practice at the Cape.

The following names were omitted from the list of Fellows of the Society of Architects (London), which was published in last issue: D. M. Sinclair and G. W. Nicolay (Johannesburg) and Victor T. Jones, of Port Elizabeth.

The Registrar has received an application from a student draughtsman, with three years' experience, desiring an appointment. Any practitioner requiring such an assistant should communicate with the Registrar.

Mr. D. M. Sinclair has been elected Vice-President of the Associated Scientific and Technical Societies of South Africa for the current year.

Mr. Ronald Bullock has commenced practice at 17, Trust Buildings, Fox Street, Johannesburg.

Mr. A. J. Thompson, F.R.I.B.A., of Capetown, has been elected a member of the Association.

The following books have been added to the Library:

"Building Quantities," by N. T. Cowin.

Standard System of Measuring Builders' work in South Africa.

"A History of Architecture on the Comparative Method" (6th Edition), by Banister Fletcher.

"Kidder's Architects' and Builders' Handbook" (17th Edition).

"Building Contracts," by E. J. Evans.

The Standard form of Conditions of Contract agreed upon by all the architectural bodies represented at the recent conference and the National Federation of Building Trade employers in South Africa will be ready for issue at an early date. Applications for supplies should be made to the Registrar. It is expected that the price will be sixpence per copy.

The chemical hand extinguisher is now recognised as a necessary part of the equipment of modern buildings. Architects in this country have in the past been at a loss in selecting an appliance from the many offered, which can be depended upon to prove reliable at all times, as the majority hitherto on the market here seem to be of the type which have to be periodically refilled. There are many British-made appliances to which this objection does not apply, and of which the reliability has been proved. This is the type of appliance that is sought for, and it seems strange that the British manufacturer has apparently overlooked this market. However, we are now pleased to note that Messrs. Minimax, Ltd., who present their appliance as the "Rolls-Royce" of fire extinguishers, have made a tardy appearance here and are establishing branches throughout the Union. We understand that they have brought a staff of experts from England to form the nucleus of their organisation, and to institute their system which provides for the periodical inspection of all appliances supplied by them to ensure that they are at all times kept ready for instant use, which obligation we realise is only likely to be effectively carried out by those who stand or fall by the good name of the appliance.

Journal of the SA Architectural Institute

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