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and of the Natal Institute of Architects.*

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THE ASSOCIATION'S ALLIANCE WITH THE ROYAL INSTITUTE OF BRITISH ARCHITECTS.

Since our last issue the Council of The Association of Transvaal Architects has taken the necessary steps to be admitted into alliance with The Royal Institute of British Architects.

It had been thought previously that a technical difficulty to alliance between these two bodies existed by reason of their dissimilar constitutions. The Royal Institute, together with its allied societies in Great

Britain, are all voluntary bodies with regard to their membership, while the Association of Transvaal Architects is a statutory body incorporated under the Architects Private Act, 1909, Transvaal, and consequently every architect practising in this Province must of necessity be registered as a member of the A.T.A., whereas membership of a voluntary body is not an essential to practise.

As a result of interviews between the editor, when in London last year, and the secretary of the R.I.B.A. on this subject, it was found that no obstacle to the alliance existed, provided that the

Council of the R.I.B.A. approved of the constitution and bye-laws of the Association. Formal application has now been made by the Council of the A.T.A. to be allied with the Royal Institute, and confirmation of this will no doubt be received in due course.

As a result of this alliance, the architectural societies of the Cape, Transvaal, and Natal are all allied with the Royal Institute, and we are now a step further towards the establishment of a South African Institute and the unification of the architectural profession throughout the Union.

The Institute of Transvaal Architects, the oldest society of architects in the Transvaal, has up to the present been the official body representing the R.I.B.A. in the Transvaal. Its members, by virtue of the Architects Act, are also members of the A.T.A., consequently the alliance of Association renders the Institute redundant, while the three local architectural societies has often caused considerable confusion among commercial and other bodies connected with the building industry. We understand that it is the intention of members of the Transvaal Institute to dissolve and return their certificate of alliance. The South African branch of the Society of Architects, London, will, however, continue to carry on the work and interests of their parent society in this Dominion.

A matter of considerable importance to the architectural profession—the question of architectural education and examinations—is being generally discussed by the various architectural organisations at home and abroad. It is significant of the increased interest and progress in this matter that architectural schools are being established in various centres of the Empire's dominions, the most recent additions being the Chair of Architecture recently established at the Witwatersrand University and the School of Architecture conducted by the Cape Institute.

By a recent mail we are informed that the Royal Institute has under consideration the conduct of qualifying examinations in the Dominions, and the A.T.A. has been asked in the meantime to conduct such examinations when required in Johannesburg. At the same time this important subject is moving our South African architects to hold a conference on educational matters at Durban in August next. It is sincerely hoped that this conference will lead to a unity of policy and procedure in maintaining the high standard of efficiency required to obtain the R.I.B.A. diploma. There is a grave danger of this standard being considerably lowered if architectural societies in

more remote parts of the Empire conduct examinations on local lines, which might be accepted as qualifying for candidature of the R.I.B.A., and thus opening up a channel of lesser resistance for the student who desires to obtain the Royal Institute status and diploma, which is a recognised qualification universally.

We have also received advice of an International Congress on Architectural Education to be held in London in the autumn of 1924, and no doubt valuable matter for discussion at that conference will result from the deliberations of the Durban conference on the same subject. It is hoped that it will be possible for a South African delegate to attend the London conference, or that a South African architect resident in England and familiar with our educational necessities and facilities will be able to represent the architectural profession of the Union.

SIR CHRISTOPHER WREN AND FRENCH WORK.

It is well known that Wren availed himself considerably of French influence, and much of his detail has a feeling of French art translated into his own architectural language.

Mr. Edward H. Waugh submits that his grandmother's grandfather, Edouard Le Marques, an architect and a French Huguenot, was sent for to France by Christopher Wren to come over and assist him in his work, which he did for a long time. This Le Marques had a son, also Edouard Le Marques, who also became an architect. The first Edouard is reputed to have designed Bandon Cathedral, and the second Edouard designed the Wesleyan Church in Cork. The surname subsequently became shortened to Marks, and one of this name and family is a prominent architect in Sydney.

Mr. Waugh has the Christian name "Edward," and is thus the third pursuing the Mistress Art.

Mr. Ernest M. Powers, F.R.I.B.A., has been appointed hon. corresponding secretary for the R.I.B.A. for the Union of South Africa, and communications on matters relating to this appointment should be addressed to c/o Box 2266, Johannesburg. Architectural pupils and others desiring to be enrolled as probationers, students, or to qualify for candidature for Associateship of the R.I.B.A. can obtain all information upon application to the above address.

THE SOUTH AFRICAN ACADEMY.

Critical Considerations of the Fourth Exhibition.

The fourth South African Academy Exhibition has come and gone, and the hon. secretary and his assistants now breathe freely, for the exhibits have been packed and returned. The young aspirants, and the old duffers, will have begun planning conquests of Nature for next year's exhibition.

Was this year's Academy as good as the last? The judges appeared to think that the average was a trifle higher! but they did their judging in a kindly gloom, and probably got surprises in the trying light of the Selborne Hall.

I am told that it was not an imposing show of pictures. To my thinking, the students' exhibits marred a first impression; to the left—a disordered mess met the eye; to the right—the same thing with a difference.

A tenth part of what was shown would have been enough; grouped attractively and framed; the best only, without repetition of subject. Is there anything wrong with the idea?

The Education Department might arrange a competition and exhibition among the schools; Durban, Grahamstown and other Art Schools might be asked to contribute work as a stimulus to local effort; some Central School might house it.

We would like the Exhibition to live a little nearer to its name and become representative, and so fill all available wall space. We want Volschenk, Peerneef, Naude, Groves, Roworth, Mace, Paton, Wiles, Goodman, and others I cannot remember, to give us light and leading. Are they not to be persuaded? I quite admit another point of view. Better to bring 30 or 40 pictures, or more, and take the town by storm and the whole Town Hall; to run a one man show and adjust your prices to the needs of the occasion; to stay at the Carlton and work up your connection; to rejoice in capacity as a salesman; to arrange a suitable press notice; to leave with a year's income to command; after which you can think complacently

of 5s. charge per exhibit with a chance of rejection; possible hostility to your form of Art; unfortunate placing and consequent ignoring, packing and railway charges looming large, and sales shrinking quite out of sight.

The Selborne Hall has a fine floor for dancing, but as a show room for pictures it might be improved; distempering the lights would help, but is forbidden.

More attention will need to be given to the hanging; the hanging of the works accepted—done against time, might be bettered at leisure.

The show was open for seventeen days.

This year's pictures were smaller than previous years; as though exhibitors hoped to sell thereby and so cover expenses.

Quality we had rather see than mere size, but a good big thing will impress where a good little thing may get lost. Is this shop idea the right academic spirit?

In the Crafts Section it seemed evident. One girl will pay her 10s. and send one, her best; a firm will send 40 for sale and pay the same amount. It is the spirit of the shop, not the desire to show in the best of company the pick of the work of the year.

Then as to attendance. Would it be possible to devise some other way of shepherding the flock from the schools; the young rips of a class might be left at home, instead of being brought as a punishment.

The quiet of the morning should be for the folks who pay their shillings; we want the general public and their shillings; their genial presence and unsophisticated likes and dislikes. High brows can come, too.

Thinking of things that might be different brings me to the Press—or part of it. The show wants heralding, and we gladly welcome advertisement, but this critical, technical survey might be dispensed with. From someone speaking with authority it might be instructive—Mr. Amschewitz and the late Mr. Smithard contributed to our profit.

Does the public want to be told what is best, or which is distinctly noteworthy?

One we note is excellent in design, clean and direct in colour; others again would appear to manage without these things.

We appreciate the touch of modesty which adds initials to these criticisms; kindly, genial souls, they would not have one grieve or grow unduly elated. Any criticism of mine is but toward their conversion.

These literary lights, with gift of winged words, and a taste for reporting, might help the painter to free the thought. I am sure it might be done with their help—but not by technical twaddle. The public might be interested and brought to the show without disparagement of any work shown; praise or blame may be equally objectionable. I heard two professionals touching the fringe of an interesting discussion—it lay between a hill of white sand and a twi-

A big pastel (coloured chalk) right over against the full light and hanging between oil paintings might complain of ill-treatment.

Black and white work might be shown as a class; and where is our clever "Quip" and his fellow "D.W."?

Water colours need not be shown alongside strong oil paintings, delicate work might have its virtue nursed. Gems look best in company with gems. There were some miniatures that I thought fine. Anyone qualified to pronounce judgment might tell us



A perfect example of the wood carver's art, a four panel screen in Rhodesian teak exhibited at the fourth South African Academy Exhibition by Mr. J. R. Thurlow, of Johannesburg.

light. He thought the white sand perhaps a trifle obvious; she said the "Twilight" was more so and obvious transcript. They did not agree, but their shop talk was not addressed to the public.

Doubtless the show held work good and bad and indifferent. We want more of South Africa represented. I should suggest the elimination of the school exhibits and students' works; there should be a scrutiny of the crafts work, for this section badly needed pruning; the sculpture section wanted a weeding out; the hanging done with greater deliberation, or remedied gradually after the opening ceremony.

whether the quality of design was inferior to the quality of the work in the crafts section.

It would appear as though somebody is wanted to guide our youngsters in paint; quietly showing where their tendencies may lead them. There is plenty of promise, but many seem getting off the road—some will find their way back. The path in Art lies through self-development and youth will have its fling. Many have forgotten the virtue of subtlety, and follow the colour print. Elimination of the unessential is all very well—it implies knowledge of essentials.

Is there the necessary seriousness?

Our young folk would do well to regard Art as worthy of all devotion—a service which requires a long probation.

Dame Nature even now makes fair faces, as fair as ever before. We, too, see the return of Persephone—of Spring. There is no need to outface Nature's quiet beauty by any attempt at improvement. The world is full of beauty.

Our Academy will be impressive when our young folk, with equipment for performance, work out their own salvation from such material as may lie to hand. Meanwhile we must work and wait and ask the architects to nurse us a little while longer; and we must try and get more work from the brethren at the Cape.

Speaking of seriousness: In 1638 Milton, at the age of nine and twenty, has already determined that his life work shall be a poem, an epic poem.

A pamphlet written in 1641 shows him asking for more time—for a work not to be raised from the heat of youth or the vapours of wine, like that which flows at waste from the pen of some vulgar amorist, or the trenchant fury of a rhyming parasite, nor to be obtained by the invocation of Dame Memory and her siren daughters; but by devout prayer to that Eternal Spirit who can enrich with all utterance and knowledge, and sends out his seraphim with the hallowed fire of his altar to touch and purify the life of whom he pleases. To this must be added industrious and select reading, steady observation, insight into all seemly and generous acts and affairs.

Here is another:

"I might perhaps leave something so written to aftertimes as they should not willingly let it die."

We may not soar so high or hope to scale these peaks of purity, yet surely a little of such leaven is what we are needing here.

A passion for reality and some such thought must have informed Anton Van Wouw as he modelled the clay for his "Paul Kruger."

It is a plain face, plain enough to scare; yet Van Wouw has felt its dignity, and has given it the best work of his hands.

I should be glad to hear that the Municipal Council might be thinking of buying that bronze for the Art Gallery in Joubert Park, and this would seem a natural place for me to end.

A. E. G.

BENEVOLENT FUND.

Urgent Appeal.

Owing to exceptional calls having been made upon the resources of the Benevolent Fund of the Architects of the Transvaal, the trustees find that the whole of their funds on current account has been depleted; in anticipation of certain calls of a particularly urgent nature now under consideration, the trustees, Messrs. Edward H. Waugh, Walter Reid, and H. G. Veale make this special appeal to all members of the profession for an immediate donation. It is felt that if members resident in the Transvaal would seriously consider the depleted coffers of this fund and donate £1 per head, the trustees would receive approximately £100, which would be sufficient to meet the urgent applications they at present have before them. Please donate immediately a sum, however small, and forward it to the Registrar of the Association.

* * *

For the information of members, students and others contemplating visits to Italy we have been advised that the Italian Government has issued new regulations respecting the admission to museums, galleries and the monuments of the Roman Empire. A copy of these new regulations can be obtained on application to the secretary of the R.I.B.A., in London, or at the British School at Rome.

* * *

We regret to record the death of Mr. Paulus Westmaas, a member of this Association, lately practising in Pretoria. Deceased was one of the old school of Dutch architects, who established themselves in the Transvaal in the old Republican days; at one time he held the position of Town Engineer at Pretoria.

KING EDWARD VII. SCHOOL.

War Memorial Crest.

The accompanying illustration is of the School Crest lately erected at the head of the School War Memorial which has been placed in the quadrangle of the building at Houghton Estate, Johannesburg. This crest is of cast bronze with the coat of arms in enamels, the work of the Birmingham Guild, Ltd.



Special permission was obtained by the authorities for the use of the crown, which forms a prominent feature of the memorial.

The memorial design was submitted in open competition by Mr. Donald Nurcombe, an old King Edward boy, and the work has been carried on under the supervision of Mr. H. W. Spicer, of Johannesburg, consulting architect to the school.

It has been definitely decided to hold the Architectural Educational Conference in Durban on the 9th July, 1923. The Transvaal will be represented by three delegates, who it is hoped will be Messrs. F. L. H. Fleming, John Waterson and Allen Wilson.

The Secretary of the Union Architectural Practice Committee, Mr. M. K. Carpenter, will also be present.

We understand that quite a number of architects from the Transvaal intend to visit Durban early next month, so, apart from the delegates, the profession will be largely represented there during the winter season.

OBITUARY.

JOHN FRANCIS BEARDWOOD (Past President, 1914).

The architectural profession has sustained a serious loss in the death of John Francis Beardwood, which took place a few days ago, after a brief illness. Deceased was in his seventieth year. Of a particularly gentle and lovable nature, he was esteemed by all his professional colleagues. During a long and honourable career, he was ever ready with assistance and advice, to which his ripe experience lent especial value.

Mr. Beardwood served his articles with Sir George Moir, of Dublin, and afterwards practised in that city, but ill-health brought him to this country about thirty years ago, where he joined the firm of the late Arthur Reid, of Johannesburg.

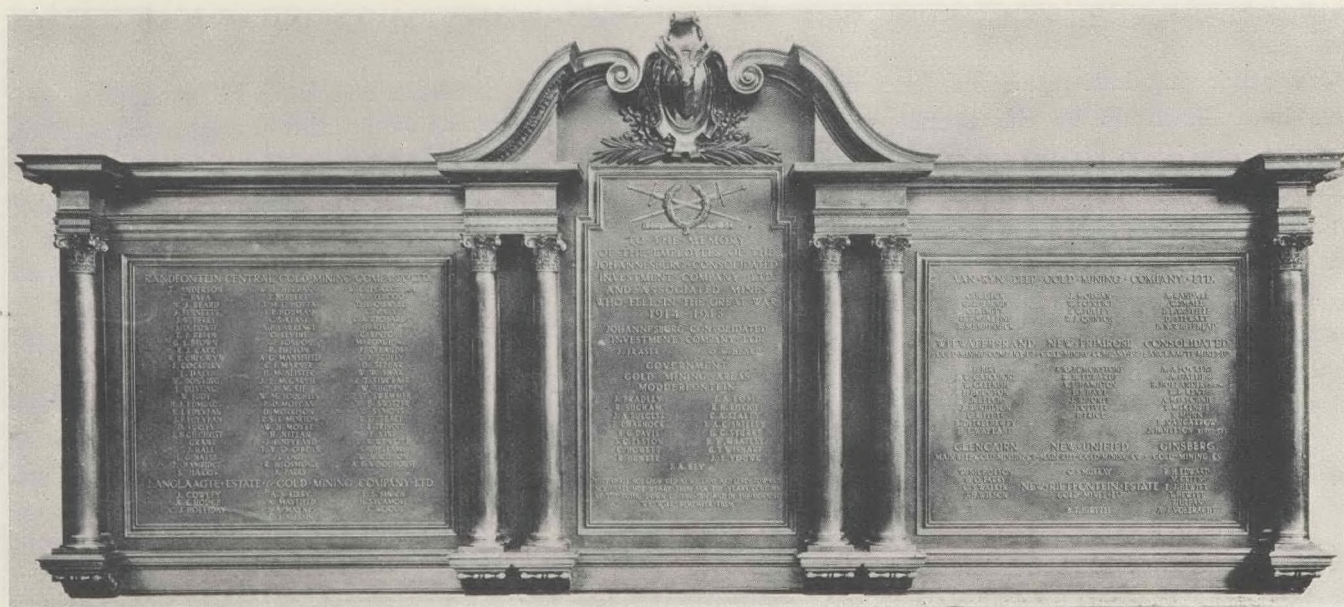
Shortly afterwards he started practice for himself in partnership with the late Mr. Ibler. His professional life had been a very active one—not only in private practice, but in the various architectural organisations.

He filled the presidential chairs of the Association of Transvaal Architects, the South African branch of the London Society of Architects, and the Transvaal Institute of Architects. In addition he took an earnest and active part in the Councils of those bodies. At the time of his death he was senior vice-president of the Society of Architects (South African branch).

Mr. Beardwood's principal work in South Africa was carried out for the Roman Catholic community. Amongst other important works, he designed and supervised the erection of convents at Port Elizabeth, Kroonstad, Newcastle, Parktown, Germiston, and Benoni, and at the time of his death he had just completed plans for the rebuilding of the convent at End Street and the Good Shepherd's Home at Orchards. He built the Sanatorium and Nazareth Home at Durban, and in partnership with the late Mr. Ibler designed and carried out the Roman Catholic Church in Kerk Street, Johannesburg, some years ago. A large number of houses and business premises stand to his credit.

As one of the late Mr. Beardwood's oldest friends, and knowing my professional colleagues as I do, I am sure I am voicing the unanimous feeling when I say the loss of an honourable and upright gentleman and a distinguished architect is deplored by the whole profession. And we humbly offer our sympathy to his widow and family, and may his soul rest in peace.

H. G. V.



THE MEMORIAL.



Detail of Cap of Columns.



Detail of Central Feature.

The War Memorial in cast bronze to the design of Mr. Harold W. Spicer, Architect, Johannesburg, erected by the Johannesburg Consolidated Investment Corporation Limited, in the Board Room of the Head Office, Fox Street, Johannesburg.

DRAFT MODEL REGULATIONS FOR TOWN PLANNING.

The following draft regulations for Town Planning have been drawn up by the Council of the Town Planning Association (Transvaal) and submitted to the Minister for Public Health for the Union for decision as to the desirability of their promulgation either in this or in an amended form for the guidance of local authorities who may desire information in regard to the outstanding principles of modern Town Planning. The regulations have been submitted under the three following headings:—

- A. General Considerations and Advice which cannot be embodied in Regulations.
- B. Draft Regulations under Public Health Act, No. 36 of 1919, Section 132 (b).
- C. Directions in which Further Powers are necessary.

A. GENERAL CONSIDERATIONS AND ADVICE.

In the general "lay-out" of a township, the following considerations should be specially borne in mind:—

1. The object or purpose of the township, *e.g.*, whether to be a suburb or a self-contained community.
2. The careful preservation and utilization, so far as is reasonably practicable, of features of natural attractiveness and amenity.
3. Such delimitation, as in the circumstances of each case may be desirable, of areas for residential, for commercial, for factory and workshop, and for offensive trade purposes, having regard to character and relative position of the various parts of the district, existing and proposed means of transport and communication, prevailing winds, etc.
4. The dedication to public use of a sufficiency of open spaces and recreation grounds.
5. The careful lay-out and regulation of streets, with regard to through communication, to local requirements and variety of traffic, to convenience and safety, to the general slope of the land, to the avoidance of the chess-board and the cautious use of gridiron arrangement, to economy of expenditure for construction and upkeep, to drainage necessities, and to vista effects and general amenity.

6. The careful correlation of the dimensions of *building plots* with the measurements of the *blocks* which they form.
7. The limitation of dwellings per acre and of the proportion of residential, commercial and factory sites which may be built upon.

B. TOWN PLANNING DRAFT REGULATIONS.

(Public Health Act, No. 36 of 1919, Section 132 (h).)

1. (a) These Regulations may be cited for all purposes as the "Town Planning Regulations," and shall come into operation on the day on which they are gazetted in the Union of South Africa Government *Gazette* by direction of the Minister of Health.

(b) In these Regulations, unless the context otherwise requires—

- (i) "The Minister" means the Minister of Health.
- (ii) "Local Authority" means the Council of a Municipality, Borough or other Municipal Corporation, or a Village Management Board, or the Board or a Council of any other duly constituted body having the local government of an urban or suburban area, or the *Administrator in terms of the Public Health Act No. 36 of 1919, Section 8 (2)*.
- (iii) "Owner" means any person receiving the rent or profits of such land or premises from any tenant or occupier thereof, or who would receive such rents or profits if such land or premises were let, whether on his own account or as agent for any person entitled thereto or interested therein, and as used in connection with any property movable or immovable, the word "Owner" or other words denoting the person owning such property shall, for the purpose of enforcing the penalties under these by-laws mean, in the case of a firm or partnership, all or any one or more of the members of such firm or partnership, and in the case of any public company and of any body of persons, not being a firm or partnership in the ordinary meaning of these terms, the secretary or manager of such company, or body, or should there be no secretary or manager, then any member of the Board of Directors or Managing Board or Committee of such company or body.

- (iv) "Person" shall include Joint Stock Companies or any body of persons whether incorporated or not.
- (v) "Width" of a street means the whole extent of space intended to be used or laid out so as to admit of being used as a public way, including footways, and shall be measured at a right angle to the course or direction or intended course or direction of such street.
- (vi) "Street" means, unless the context otherwise requires, any street or road (not being a footway, lane, alley or passage), whether a thoroughfare or not, and shall include the whole length of such road whether or not intersected in any part of its length.
- (vii) "Zone" means any specified area of land in any lay-out the use of which is specifically restricted to the purposes of residence, or recreation and open spaces, or business and commerce, or factories and workshops, or offensive trades.

2. Any person intending to subdivide or lay out any land for the purpose of building, or which is capable of being used as building sites or industrial or agricultural plots, may first submit to the local authority his proposals, accompanied by a sketch plan illustrating his scheme and showing roads and contours. In any case, if he decide to proceed, he must submit to the local authority for its approval a preliminary plan conforming in all respects with these regulations. Such plan shall be on a tracing linen or drawing paper, or be a print, in any case in duplicate (one copy being retainable by the local authority, or, if subdivision of existing site or sites, six prints shall be submitted), and there shall be shown upon it the correct angles and boundaries of the land to be sub-divided with the co-ordinates referred to on the plans of the Surveyor-General's Department, and any portions of adjoining farm lands, sub-divisions or streets contiguous thereto, any proposed open spaces, streets, lanes, drainage ways for storm water, with proposed names and widths thereof, the stands or lots into which it is proposed to subdivide the land, the true north point and contours taken to show levels at differences of not more than five feet.

The preliminary plan shall be signed by the surveyor and the owner of the land. It shall be drawn to a scale of not less than 200 feet to an inch. Such preliminary plan, duly drawn according to the Surveyor-General's Regulations, shall subsequently be submitted to the Surveyor-General by the owner, showing the scheme as approved by the local authority, and, on his approval of such final plan, a tracing in Indian ink, being a true copy thereof on tracing linen, certified by a licensed surveyor, shall be lodged by the owner of the land with the local authority to be retained by it.

No person shall alter, or cause to be altered, any such plan or lay-out unless in conformity with these regulations and with the consent of the local authority subsequently approved by the Surveyor-General; nor shall any person do any work, or cause such to be done, on any land referred to or affected by such approved plan until such approved plan has been finally lodged with the local authority.

Every person submitting a scheme for the lay-out or sub-division as aforesaid of any land shall have the right of appeal to the Minister from any decision of the local authority.

3. Ground liable to flooding or to remain wet shall not be laid out or used for residential sites, and ground which has been filled in with any kind of rubbish shall not be so laid out or used unless and until a certificate to the satisfaction of the Minister is furnished that such ground may be so used without danger to health.

4. The local authority shall in every lay-out establish and delimit zones within which shall be prohibited the establishment or conduct of occupations or trades likely to cause nuisance or annoyance to persons residing in the neighbourhood.

No person shall within any such zone establish or conduct any such trade or occupation as aforesaid.

5. When in any lay-out any district or portion to be sub-divided is isolated from an existing or proposed sub-divided area, the sub-division of such district or portion shall have regard to the requirements of arterial and other traffic, both through and between such areas, and also for circumferential main roads.

6. The lay-out of streets shall conform, so far as is practicable, to any general scheme of main arterial or circumferential roads which has been adopted by the local authority.

No change of direction in any street shall be less than an included angle of 120 degrees within a distance of any 200 feet, except it be unavoidable for some reason of grade or contour.

7. Notwithstanding the requirements of any by-law in regard to the width of streets, the following conditions shall apply:—

(a) Provided such street—

- (1) will contain only dwelling houses;
- (2) be not more than 900ft. in length;
- (3) be not in continuation of a 40ft. street with carriage way of 24ft.;
- (4) join at each end a 40ft. street with a carriage way of 24ft

Then (1) the carriage way need not exceed 21ft. *minimum* and each of two footways 4ft. *minimum width*; but

(2) turning-spaces must be provided not more than 450ft. apart or from either end of the new street, each space to be 30ft. wide and 900ft. super.

(3) surface of carriage-ways and footways must comply with by-laws.

(b) Where the owner or owners of any lands shall in connection with the laying out and development of the same for building purposes set apart on such lands as a private or as a public open space to the approval of the local authority, any land (being not less than one-tenth of the area being or about to be laid out or developed, exclusive of streets, or one-half acre in extent, whichever shall be the greater), then any new streets which the Council considers unlikely to be required for through traffic, may be laid out or constructed as shown in the following table:—

Streets not exceeding in length	Minimum total width	Minimum width of carriage way	Turning spaces, dimensions of	Space between carriage way and street boundary
350 ft.	22 ft.	16 ft.	One 30 ft. wide 900 sq. ft.	1 footway at least 3 ft. wide
750 ft.	22 ft.	16 ft.	Two 30 ft. wide 900sq. ft., 300ft. apart or from either end	1 footway at least 3 ft. wide
1500 ft.	30 ft.	Surface of carriage way and footways, if any, all in accordance with by-laws.		

(c) No sanitary or scavenging passage shall be less than 12ft. in width, and no lane or passage for pedestrian traffic less than 6ft. in width.

8. No street shall be laid out with only one entrance unless the requirements of drainage and amenity and traffic—either present or probable—are not likely to require that such street be made with an entrance at both ends, and where such street exceeds 300ft. in length it shall be provided at the inner end thereof with a turning space at least 30ft. wide and 900ft. super.

9. Every street shall be so laid out as to be capable of efficiently conveying away the storm-water and sewage, and, if necessary, on account of dips and depressions in the land or for other reasons, drainage ways of sufficient width for the conveyance of storm-water and sewage to streets below shall be vested in the local authority.

10. Every street exceeding a total width of 22ft. shall, where reasonably practicable, be so laid out as to be capable of being formed into a carriage-way with gradients not exceeding 1 in 15 for ordinary side streets,

or 1 in 30 for main thoroughfares, and that the cross section shall not necessitate a cross fall to exceed 1 in 7.

Every street the grade of which will exceed 1 in 20 shall be so laid out as to minimise danger from fast traffic.

11. To minimise risk to converging traffic at any street junction, each corner thereof shall be so treated as to afford and maintain an unobstructed cross-view at least equal to that securable by setting back such corner 6ft. from the apex of the angle of intersection by which it is formed, and an additional 1ft. for every 10 degrees by which such angle is less than 90 degrees; provided, however, that this requirement shall not be compulsory as regards street junctions in zones or areas delimited or likely to be used principally for purposes of business or of factories and workshops or of offensive trades, where the average width of such streets at their point of junction is not less than 70ft.

12. Blocks, wherever practicable, shall be not less than 600ft. nor more than 1,500ft. in length, and, where such length exceed 600ft., the local authority may require the provision of an intersecting pedestrian way at least 6ft. in width, at right angles to the long axis of any such block.

13. Where two or more adjacent non-converging streets enter upon the same open space, the distance between their nearest boundaries shall not be less than 150ft. at the point of entry of each such street.

14. Where more than two adjacent converging streets intersect, an open junction space shall be provided, the minimum size of which shall be determined by the requirement that, where reasonably practicable, the distance between the nearest boundaries of such streets at the point of entry upon such junction space shall not be less than 150ft.: further, there shall be provided, if so required by the Minister or the local authority for the purpose of the gyratory regulation of traffic, at the centre of such junction space, a circular refuge and, at the mouth of each street, a refuge whose sides shall be curved sufficiently to act as a guiding wall for the flow of traffic in the required direction.

Unless, in the opinion of the Minister, it is otherwise desirable in the public interest, not more than four converging streets shall be permitted to open on any junction space.

15. The owner of any land which it is proposed to sub-divide as residential building lots shall cause to be drawn upon the plan thereof in dot and dash lines building frontage lines indicating that no buildings are to be placed between such lines and the street boundary.

If, at a subsequent date, the requirements of the neighbourhood alter so that business or storage premises

are necessary, the local authority may, with the consent of the Minister, authorise the cancellation of such building frontage lines, in any block or part of a block, such block or blocks to be contiguous to existing business or storage premises, if any. Before a resolution thereto is finally adopted by a local authority the local authority shall call upon the parties interested in effecting such cancellation to deposit the cost of advertising and notifying the intention of cancellation. Such advertisement shall appear three times in local newspapers circulating in such Municipality over a period of three weeks, and there shall also be placed, at the cost of the parties interested, notices in at least three conspicuous and separate positions on the block affected, which shall set out the intention thereof. Should any objection be made at the expiry of the said three weeks as duly stated in the advertisement and notices, the local authority shall appoint a Board of at least three persons to hear the objections. The decision of such Board shall be binding unless appealed against by any objector to the Minister, whose decision shall be final. Should no objection arise, the local authority may pass such resolution as may appear to it suitable to the case.

16. Lots or stands hereafter shall not be less in depth than 120ft., and the width shall be at least 60ft. No two parallel or approximately parallel streets shall be less than 240ft. apart.

Lots or stands which are of a shape which it is not practicable to have made rectangular shall have an area equal to at least 7,200 sq. ft.

17. In every scheme of lay-out not less than 20 per cent. of the total area shall be dedicated to the local authority for application, at its discretion, towards the cost of the future formation of streets, carriage-ways and foot-ways, and a further area equal to not less than 5 per cent. as open space, park or recreation grounds, and no erection other than sport pavilions and stands, conservatories, refreshment rooms, conveniences, tool sheds and caretaker's accommodation shall be permitted thereupon.

18. The local authority may limit the number of dwellings or other buildings to be erected on any building site in any lay-out, and may establish zones within which different limitations shall apply.

No person shall erect upon any building site any dwelling or other building in excess of the number sanctioned by the local authority.

19. The proportion of land within the curtilage of the site of a shop, including a dwelling house forming part thereof, tenement, hospital, workhouse, college, school (not being merely a dwelling house so used), building of the warehouse class or domestic building not being a dwelling house which may be occupied by buildings shall not exceed *one-half* of the whole area of

the curtilage: Provided that, subject to the by-laws for the time being in force with respect to open space in front or in rear of such buildings, the extent of the buildings shall be measured above the ground floor level of 14ft. above the mean level of the footway in front thereof.

20. The proportion of land within the curtilage of the site of a dwelling house which may be occupied by buildings shall not exceed *one-third* of the whole area of the curtilage where such buildings are erected on land having a frontage to more than one street or where such buildings are dwelling houses not exceeding one storey in height and one storey in the roof with offices and outbuildings attached thereto or used in connection therewith. Provided that, on the application of owners of land forming the curtilage if the sites of four separate dwelling houses adjoining and having together a frontage to more than one street, the proportion of land which may be occupied by buildings shall be reckoned as an average over the area of the curtilages of such four sites.

PENALTIES.

21. Any person infringing any of the aforesaid Regulations shall be liable, on conviction, to a fine not exceeding Fifty Pounds (£50) or three months' imprisonment for the first offence, and for a second or subsequent offence to a fine not exceeding Two Hundred Pounds (£200) or six months' imprisonment, and, in addition, for each day such offence continues after written notice thereof has been sent to such person by the local authority or the Minister, to a fine not exceeding Two Pounds (£2) per day.

22. The engineer of any local authority is authorised to sign notices under these Regulations for the area under such local authority, but every local authority may, by resolution, instead designate and appoint another person, holding office under such local authority to give notices under these Regulations, and the production of such resolution, signed by the clerk of such local authority, before the Court, shall be sufficient evidence of the authority of such officer. In such cases as do not fall within the jurisdiction of a local authority the Minister shall appoint a person to sign such notices.

C. DIRECTIONS IN WHICH FURTHER POWERS ARE NECESSARY.

Our consideration of the subject has made it clear to us that further powers are required in the following respects:—

- (1) To enable any local authority to prepare a scheme for the improvement of any *existing* lay-out, more especially in regard to traffic

requirements: to prepare general schemes and plans for future main roads, and to delimit zones for the special purpose of residence or business and commerce or factory and workshop or offensive trades, as the case may be.

- (2) To require promoters of railways or tramways to notify local authorities of their proposals in regard to the construction of new lines or other works, and to provide for appeal to Government by local authorities who consider that their areas would be prejudiced by the execution of such proposals.

The Town Planning Association (Transvaal), P.O. Box 7305, Johannesburg, Murray K. Carpenter, Secretary.

NEW BOOKS.

Essays and Memorials, by John W. Simpson, P.P.R.I.B.A. Published by the Architectural Press, Ltd., 27, Tothill Street, London, S.W., 1. Price, 12s. 6d. net.

This book comprises essays dealing with historical records of the building of the Great Palace at Versailles, the various schemes for re-planning Paris about the time of the French Revolution, reprints of addresses by the author to engineer officers and architectural students, and narrations of the fortunes of some old-time war memorials. We learn in the account of the work at Versailles of the efforts of the "Contrôleur-Général," M. Colbert, to control the King's extravagance and, at the same time, supervise the vast building operations and accept responsibility for many other Government departments. The appalling expenditure on this work, which was started departmentally, forced all building work to be put up to tender, with disastrous results, we are told, as the cheap contractors proved incompetent, their joinery, in particular, being deplorable. The chief clerk of works in charge of the complex operations at Versailles was a young man of seventeen, the youngest son of M. Colbert. His youth was quite unfitted for the arduous and highly technical position he had been given, and, although under the tutelage of his indefatigable father, finally fell into disfavour and was dismissed. The letters of the son to the father are of extreme interest for the glimpses they give of the building of Versailles.

Town planning in the French Revolution introduces us to a remarkable personality in M. Verinquet, an architect full of enthusiasm, who, at 58 years of age, began a new survey of Paris. His immense

work proceeded at a great pace, and the greater part of the measuring was done at night, by the light of torches, in order to avoid traffic. Marvellous workers. It is on record that when the general plan was completed about five thousand drawings had been made, and the detailed plan of one portion alone was thirty feet in length. There were many wide-awake to the civic needs of the time, and the years which preceded the Revolution show a record of dissatisfaction with the existing state of Paris, and "town planning" had come to be demanded by public opinion as necessary to the common welfare. The architect Patte in those early days sums up the whole theory of town planning in a few words, and his remarks are worth quoting. "It is not necessary to the beauty of a town that it should be laid out with cold symmetry and be an assembly of houses regularly disposed in squares or parallelograms. The essential points are, that all its approaches should be convenient; that there should be ample issues from one quarter to another for the transport of merchandise and the free circulation of vehicles; and that the whole scheme should disengage from the centre to the circumference without confusion. Above all, the avoidance of monotony and of too great uniformity should be studied in the general distribution of the plan; contriving, on the contrary, variety and contrast of form, so that all districts are not alike. The observer should not see everything at a glance; he should be constantly attracted by a pleasant and varied novelty, to excite, pique and revive his curiosity."

In the *Strange Fortune of a King's Monument*, we have an account of the beautiful Place des Victoires and the fortunes of the monument in the centre. The author throughout expresses an intimate knowledge of and love for Paris, and pays tribute to the inspiration to which we all owe so much.

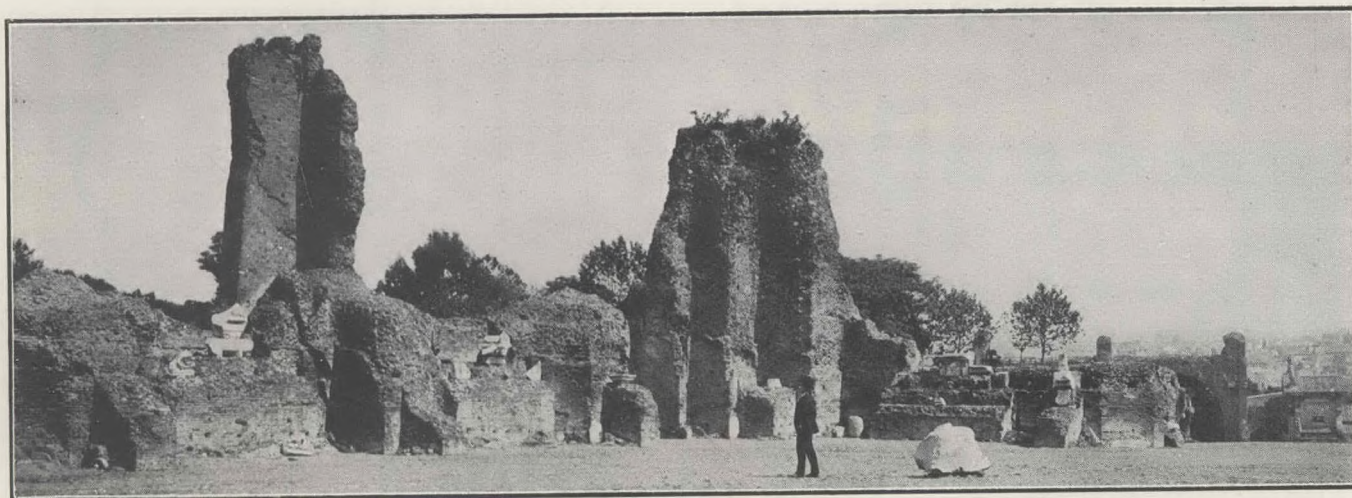
The admirable addresses on *Architectural Principles in Engineering and Suggestions to Students* set out the principles and essentials of architecture and are brimful of sound advice on professional training, and, in the sense that we are all students, these pages should be carefully read and digested, and, coming from the pen of a master architect like the author himself, need no emphasis. The book is entertaining and instructive and makes good reading.

N.T.C.

A war memorial is to be erected at Maseru, Basutoland, for the British Empire Service League, and Messrs. F. Masey & Harrison, of Bloemfontein, have been appointed the architects. The metal work for this memorial is to be in cast bronze, and the work will be executed by the Birmingham Guild. This firm of Bloemfontein architects is also engaged upon a design for a war memorial for Thaba 'Nchu.

THE FLAVIAN PALACE, ROME.

Being a Lecture by Gordon Leith, M.C., A.R.I.B.A. (Baker Scholar, 1911-12), delivered to the Members of the Association at the Scientific and Technical Club, Johannesburg, on Tuesday, the 5th June, 1923.



Ruins of the Flavian Palace. View taken from the inside of the Aula Regia, the tall man on the left is the N.E. corner of the Palace.

Before a large attendance of members and their friends and all the students attending the Faculty of Architecture at the University of the Witwatersrand Mr. Allen Wilson (Vice-President) presided, and after apologising for the absence of the President, Mr. F. L. H. Fleming, through absence from town, introduced the lecturer, Mr. Leith, who delivered the following lecture, which was illustrated by many particularly fine lantern slides, detailing the fragmentary finds in the palace, and we are indebted to Mr. Leith for his kindness in agreeing to the reproduction of a number of these illustrations with this lecture.

Mr. Leith then proceeded with the following lecture, which at intervals was added to very considerably by personal experience and anecdote, which proved particularly pleasing to the audience:—

"I believe it was through the personal representation of Mr. Herbert Baker and some of his South African friends that I was given the exceptional privilege of being attached to the excavations on the Palatine Hill, at that time being commenced by the Italian Government, under the direction of Commendatore Giacomo Boni.

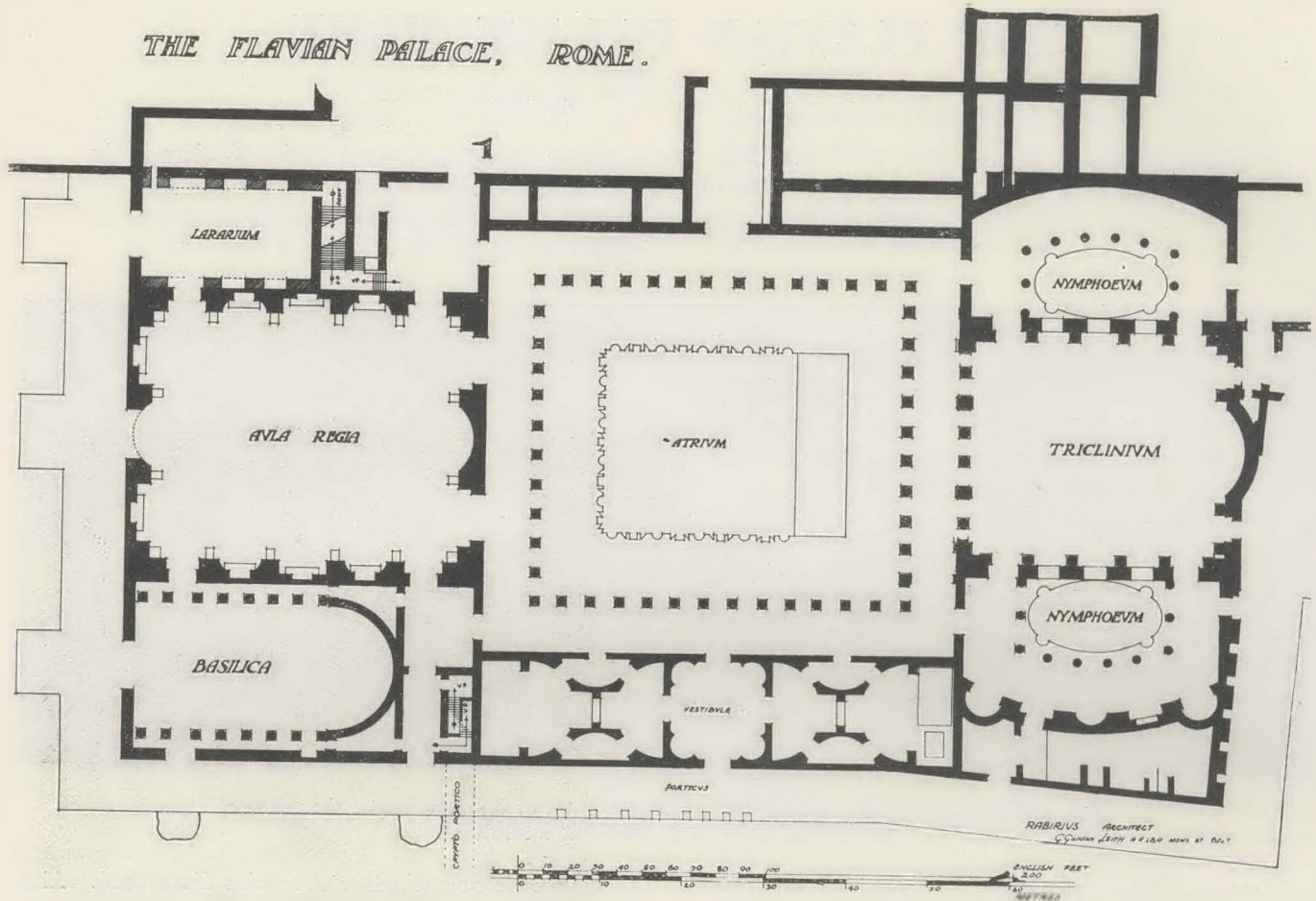
The work assigned to me was that of drawing details and of classifying the architectural fragments

as they were unearthed or otherwise discovered. Also of searching the museums of Rome, Parma and Naples, for further data that would throw light on the subject, and help to authenticate an ultimate restoration.

The Flavian Palace was built by the Emperor Domitian and embraces the so-called Domus Augustina, or house of Augustus, the Stadium Palatinus, the Horti Adonis, the Balneus Palatinus, a Pescina, and a suite of state apartments generally spoken of as the Palace of Domitian. There is now no longer any doubt that the whole of these structures constitute the Imperial Palace as conceived originally by Vespasian, and executed during the reign of his second son.

Although the Palace was considered modest in comparison with the Golden House of Nero, it covered no less than five million superficial feet of ground, exclusive of the garden, and had a frontage towards the Roman Forum of 700 feet.

The Emperor's private apartments, erroneously called the Domus Augustina, were situated between the state apartments and the Stadium, and from the point of view of planning are of considerable interest. They closely resemble Vitruvius' description of the Roman House—having two courts—the Court of Honour



Ground floor plan of State Reception Apartments of the Palace of Domitian and called by
"NERVA AEDES PUBLICOE POPULI ROMANI."

round which were grouped the Bibliotheca Oecus, Exedra, and Pinacotheca, and the Court of the Private Apartments, on to which opened the Cubiculae, Tricliniums, Pictoriums, etc. This court was double-storied, the lower floor being 32 feet below the normal platform, and level with the Stadium.

Reliable drawings of the two floors surrounding the smaller court were made by Guattani, and as an example of planning are of interest. The plans show the compartments contained within four straight walls, which is doubtless correct, but they omit to show the great segmental portico with its two exedras that served so admirably to overcome the difference in orientation between the two wings. To the south-east of the Domus is the Stadium, further to the south-east the baths or Balneus. At the north-eastern end of the Stadium is the so-called Piscina, an intricate suite of apartments containing numerous fountains and ponds, probably for the preservation of fresh, and salt water fish.

The site of the Horti Adonis, or Gardens of Adonis, which were fashioned after the style of the

Assyrian Hanging Gardens, still remains a mystery. They appear on the marble plan of Rome, and must have been of considerable size and importance. They contained fountains, pools and colonnades, probably pergolas, and amongst the specialties were large earthenware pots sometimes of brass or silver, in which fennel, lettuce and similar plants were grown for the anniversary feast of the God.

The particular portion of the Palace to which the excavations of 1911 were confined was that of the Imperial State Apartments. Here it was that the Emperor received foreign potentates, held levees, gave banquets, and exercised his jurisdiction when required to do so by the Senate. They are situated to the north-east of the Domus, and have been identified as the building upon which Nerva, after the death of Domitian, inscribed the words "Aedes Publicoe Populi Romani." To describe the magnitude and magnificence of this palace of marble and gold overlooking Rome, that from the date of its commencement in 69 A.D. remained until the fall of the Empire

the official seat of the Roman Emperors, is more than any attempt I may make can do justice to it.

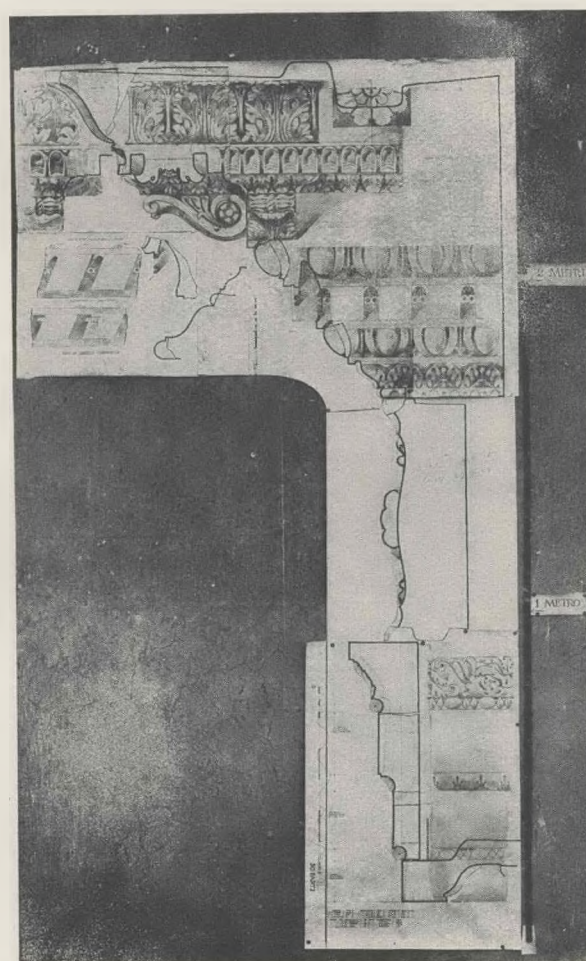
Without going into details, I am tempted to quote a description given in the "Romische Mittheilungen" of 1894, of a subterranean chamber that survived destruction until May, 1721. It refers to a discovery of a bathroom 21.30 metres long and 11.5 metres deep, "the walls of which were encrusted with Florentine Mosaic work in Pietra Dura, alternating here and there with marble bas-reliefs set in richly carved frames, and with niches for statues. A colonnade of porphyry shafts, each two feet in diameter, ran along three sides of the hall, while on a fourth side five lions' heads of gilt bronze threw jets of water into a marble basin, each fountain was flanked by ten small columns of porphyry, serpentine, giallo, verde and pavonezzo, with capitals and bases of gilt bronze. The roof, fragments of which lay scattered on the pavement, were inlaid with crusts of the rarest breccias, and seems to have been divided into panels, of which some contained mythological groups in fresco painting, others figurines of white stucco on a heavily gilt ground."

Curiously enough, these apartments were located under the triclinium during the excavations of 1912, and this description authenticated by fragments left behind by those responsible for its demolition.

The plan consists of a central Atrium with the Triclinium (Banqueting Hall) flanked by two Nymphoeums on the south-west, and the Aula Regia (Throne Room) flanked by the Basilica (Hall of Justice) and Larium (the latter being provided for those who had cause to worship the Emperor as a Divinity). The Entrance Porch provided on the north-west side of the Atrium is flanked by curiously shaped apartments, over which considerable speculation as to their function has taken place; there can be no longer any doubt that they were cloak-rooms and lavatories for male and female guests of the Emperor, suitable fittings being found *in situ* as well as shallow baths for washing the feet. Before leaving the Atrium mention should be made of the existence of an impluvium, about 3 feet deep, surrounded by niches of variegated shapes; these occur again in the centre of the impluvium and formed no doubt the pedestal of the colossal equestrian statue of the Emperor that Tacitus tells us was erected there. The Atrium measures 128 feet by 164, and was surrounded on three sides by a marble colonnade supporting a vaulted Portico; the cornices, friezes, and architraves were of white Carrara marble and carved with lace-like intricacy.

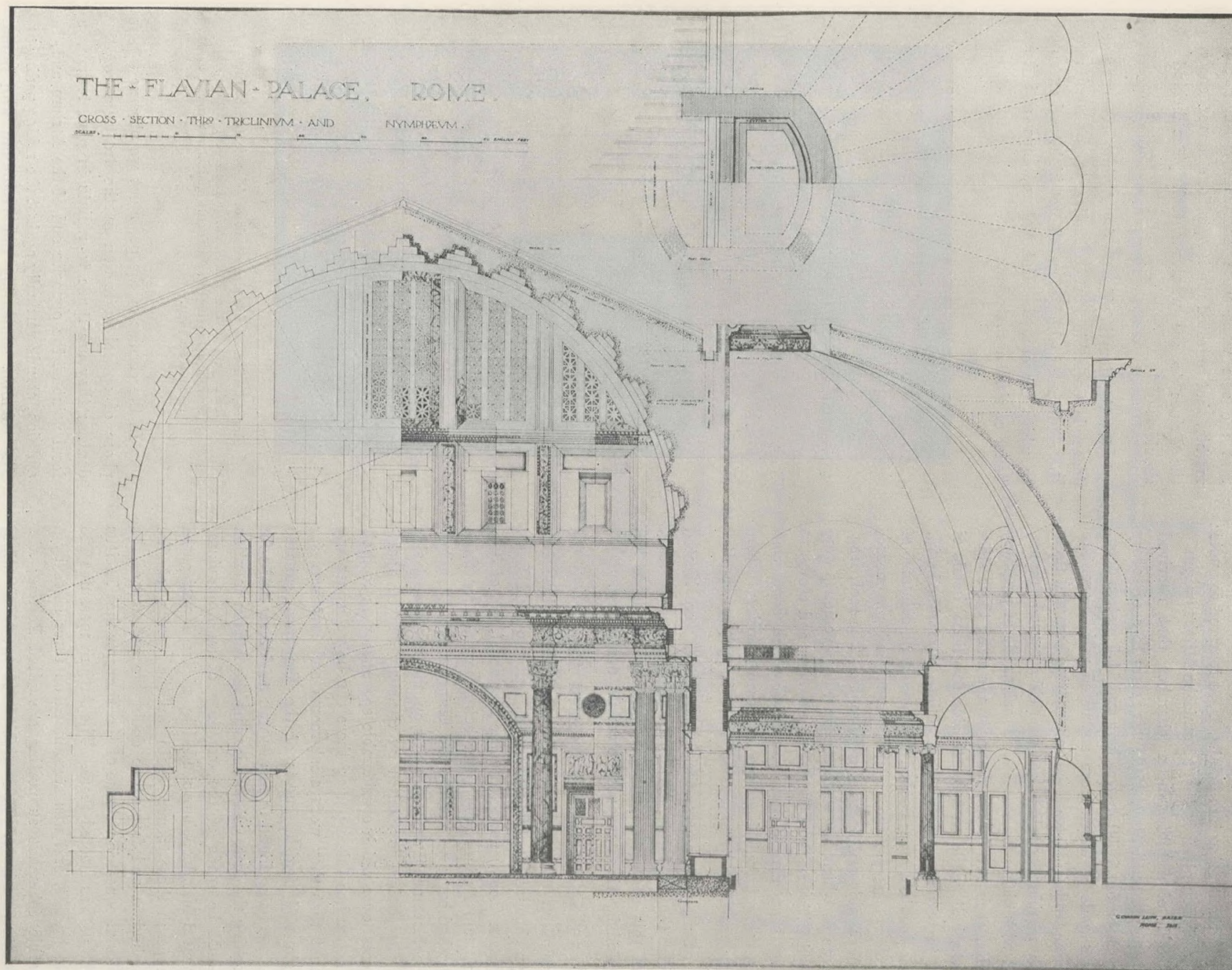
Suetonius, speaking of this Peristyle, says that it was a favourite haunt of the Emperor, and adds that the side walls were encrusted with Phengite marble, that reflected the image like a mirror, enabling the Prince to see whatever took place behind his shoulder.

On the fourth side of the Atrium rose a great decastyle Corinthian Portico leading to the Triclinium, the columns of which were 34 feet high, and executed in white Carrara, the Entablature, caps and bases being of similar material.

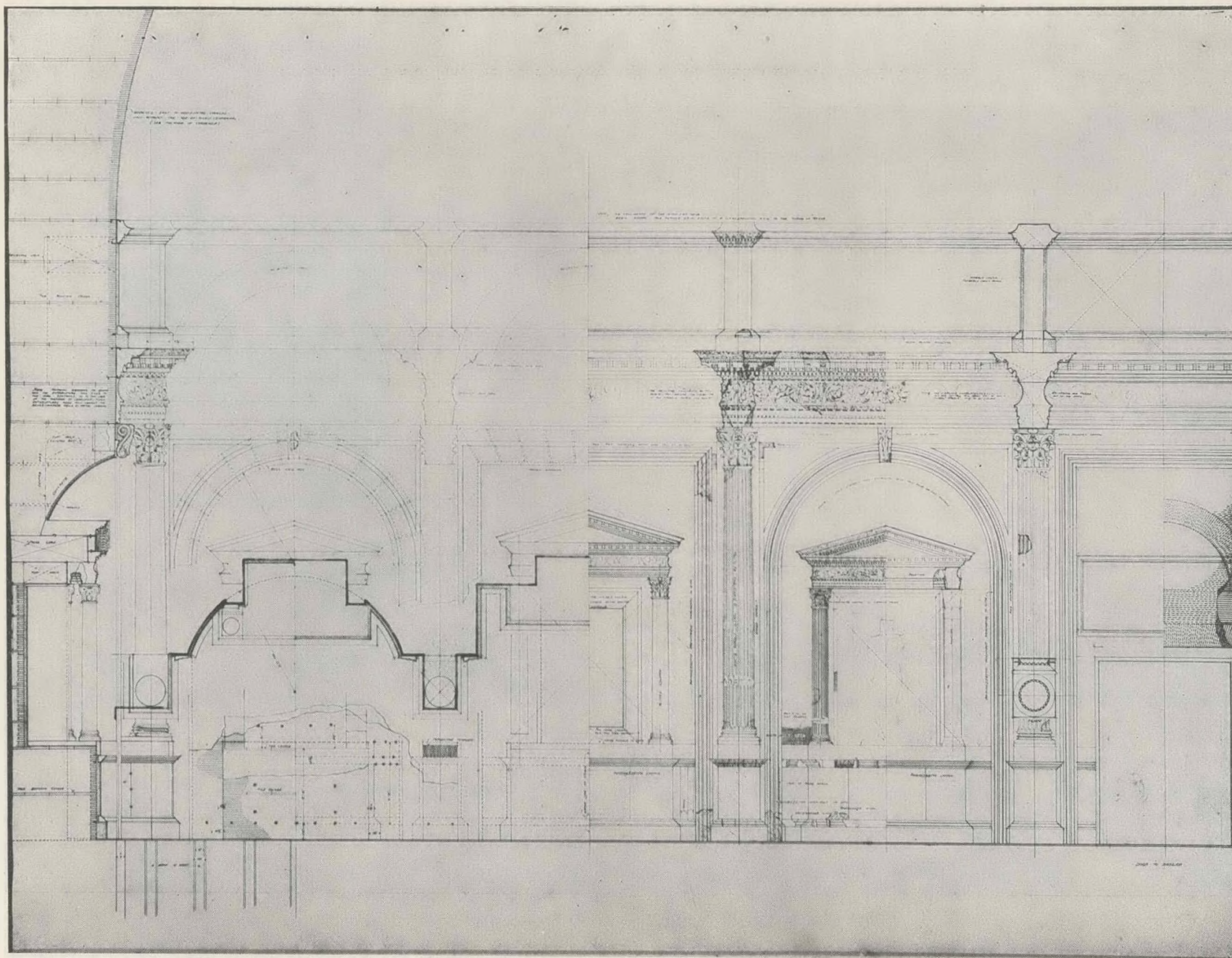


Reproduction of full size detail of Marble entablature belonging to the Triclinium portico with details of dentils belonging to Pediment which are made to radiate on plan.

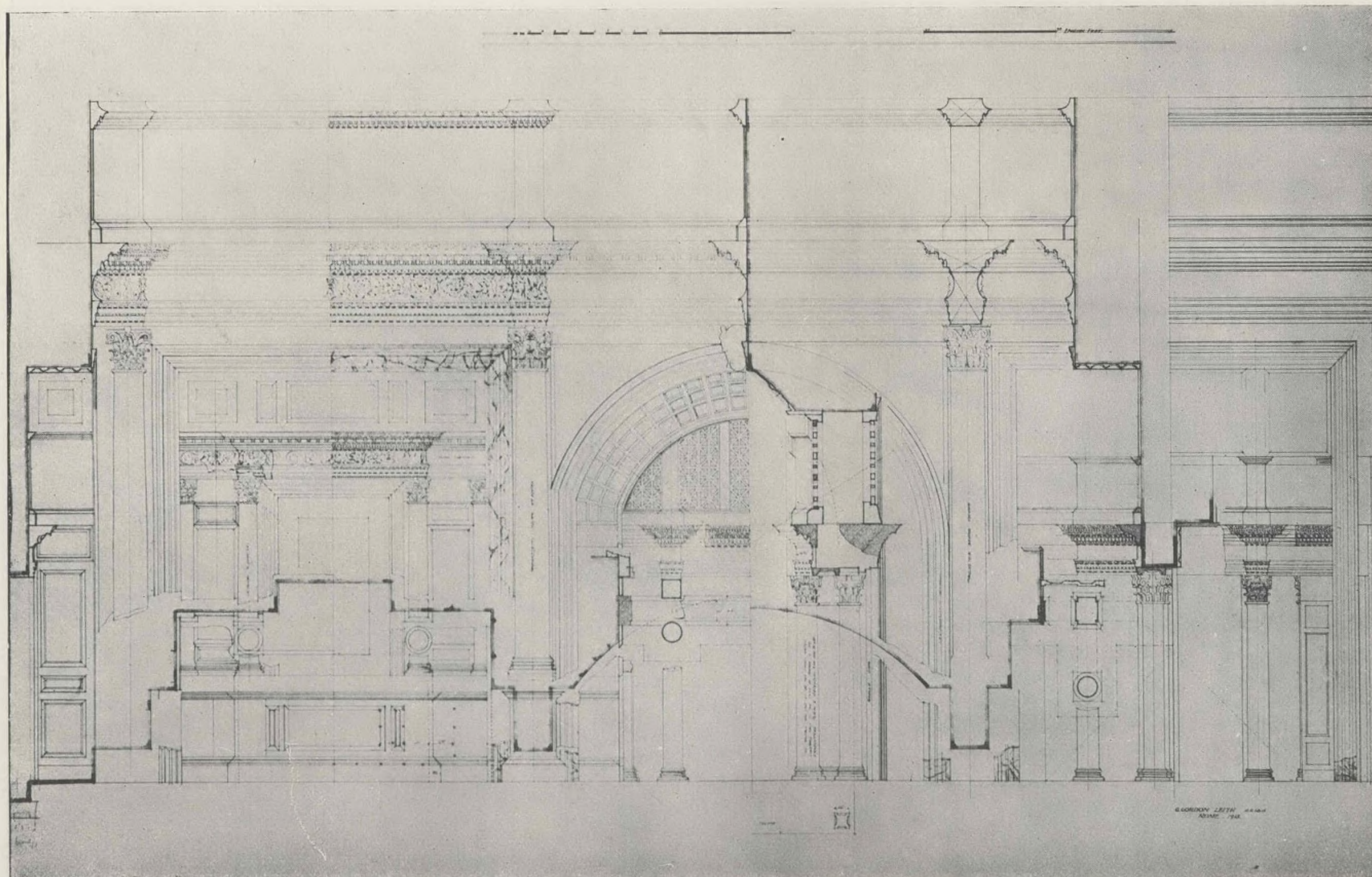
In the cornice of the pediment we observe a new phase of optical correction in the treatment of the dentils; they are made to radiate in plan towards a focal point at the opposite end of the Atrium and, in addition, stands vertically against the raking pediment. The columns supporting the Triclinium wall immediately behind the Portico were of similar proportions,



Section through Triclinium and one of the Nymphoeums. The fountain in the latter is not shown here.



Part elevation of walls in Aula Regia showing niches with Aediculae also dowel holes in existing brickwork.

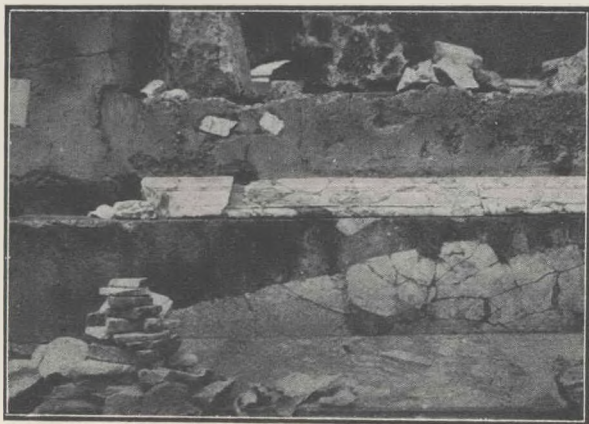


Internal Elevation of Entrance Door to Aula Regia showing niches and Aediculae in end Wall.

but in this case, owing to the weight imposed, they are of polished Egyptian granite. The walls of the interior were lined throughout with thin slabs of pavonezzo, giallo antico, red porphyry, green serpentine, Luna Carrara and other precious marbles. In addition, fourteen free standing columns of pavonezzo and giallo antico, carrying a richly ornamented entablature of Carrara lined the walls. With the exception of those of the portico, the columns of the Triclinium were of coloured marble, with lunar caps and bases, and entablatures. This is of considerable interest, as it substantiates the observations of Statius, whose description of it runs as follows: —

"Noble is the Hall and spacious, not glorified by a hundred columns, but with so many as might bear up the Gods in heaven, were Atlas discharged. The neighbouring palace of the Thunderer is amazed at thine. The Gods rejoice that thou hast thy home in as fair a seat as their own. Hasten not to ascend to the Great Sky so spacious is the great pile; more enlarged than the plain is the career of thy vast Hall clasping and closing within its wide space of sky, unsurpassed save by its great lord. He fills the place, and his mighty presence makes its delight."

"There, as in Rivalry, gleams the marble of Sikya and Ilium; resting upon syenite are slabs of Chian and blocks of sea-grey stone: and Luna is there, pressed into the service only to support the columns. So high the Vault above, the weary sight can scarce strain to the roof. You might think it the ceiling of the golden heavens."



Part of marble plinth and capping found *in situ* in Triclinium.

A considerable amount of marble paving was discovered *in situ*; it was supported on a 6 inch slab of concrete, under which an elaborate system of hypo-

causts built in brickwork bedded in fireclay was found. The pavement was laid in panels of variegated marbles containing alternating square and circular slabs of granite and alabaster, the portion embraced by the niche at the head of the room being inlaid in small sets of red porphyry and green serpentine, and alabaster.

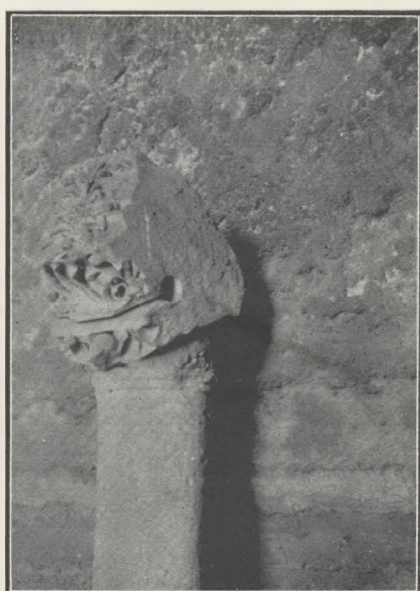
To the right and left of the Triclinium were the Nymphoeums. In these water was made to play in a thousand ways; light admitted through an hypaethral opening filtered through the branches of exotic plants, and the air thus cooled and scented with the perfume of rare flowers was passed through openings fitted with pierced marble (Cizycene) screens into the



One of the many different patterns of Cizycene Screens.

banqueting hall. The Nymphoeums were adorned on three sides by a colonnade of exquisitely fluted columns of Giallo breccia, in the centre of which an elliptical based lined with rare varieties of oriental alabaster. In the middle of this basin a fountain rose like a stepped pyramid, each stage of it being pierced with niches for plants and statuary. According to Middleton, a marble boat surmounted the group, and it is probable that the statue of Eros, now in the Louvre, among many others, adorned this aqueous fantasy. Among the fragments unearthed in the S.E. Nymphoeum was that of a small cornice, the corona of which is perforated in the direction of its length, in the shape of a key-hole. This obviously belonged to the fountain, and served as a drip for water falling from the superimposed tiers of niches in making a water screen.

A similar fragment, but belonging to a much larger order, was found in a vault near the House of Livia, and I venture to suggest that this fragment belonged to the yet undiscovered Gardens of Adonis, where it served a similar purpose relative to the pergolas.



Fragment of curiously incised Corona found near the house of Livia and belonging to the Flavian Palace.

A piece of vaulting encrusted with mosaics, heavily covered with pure gold, brought to light in juxtaposition to the S.W. Nymphaeum, strengthens the contention that Statius, in speaking of the vault as being like the ceiling of the golden heaven, referred to these apartments.

The individual mosaics are set at differently inclined planes, the object being to give lustre to the surface as seen from a distance and avoid the monotony of a smooth metallic face.

A rather interesting discovery connected with the Nymphaeum, besides that of a magnificent piece of floral paving, in Opus Alexandrina, was the presence of a square shaft about 4 feet 6 inches, descending from the basin of the Nymphaeum to an as then undiscovered depth; a similar shaft that I found in a part of the Domus descended to a depth of 86 feet, and even then the true bottom had not been reached. Without giving all the evidence available at the time, I may say that it was Boni's impression that he had discovered an hydraulic lift. Whether the lift served the Emperor, or was used for hoisting building material, I am unable to say, but the feasibility of both having been effected hydraulically has every chance of being proved.

To return to more definitely established facts we have to foregather in the Aula Regia, or Emperor's Throne Room. Here we have to imagine an apartment

measuring 109 feet by 122 feet, with its ceiling coved in all directions so as to form a rectangular dome. This simple shape elaborated with sixteen marble columns dividing its 9 foot thick walls into an equal number of bays, which were occupied alternately by square and semi-circular niches, some containing great doors of gilt bronze, others adorned with colossal aediculae, themselves recessed to receive statues of the Gods carved in black basalt. As is to be expected, the most important niche was reserved for the Emperor. In the centre of the wall opposite the main entrance was the Augustale Solium, or Throne, where the ruler of the world sat with all the pomp and majesty that man could muster.



Marble fragments belonging to the Aula Regia, also a Roman Sundial, now housed in the Farnese Palace.

Many valuable fragments belonging to this apartment were found, notably at the Farnese Palace; others reached Naples, and there is no doubt that the great museums of London, Paris, Vienna and Berlin share in the possession of spoils, which collectively is of inestimable value, while independently are of little or no importance whatsoever.

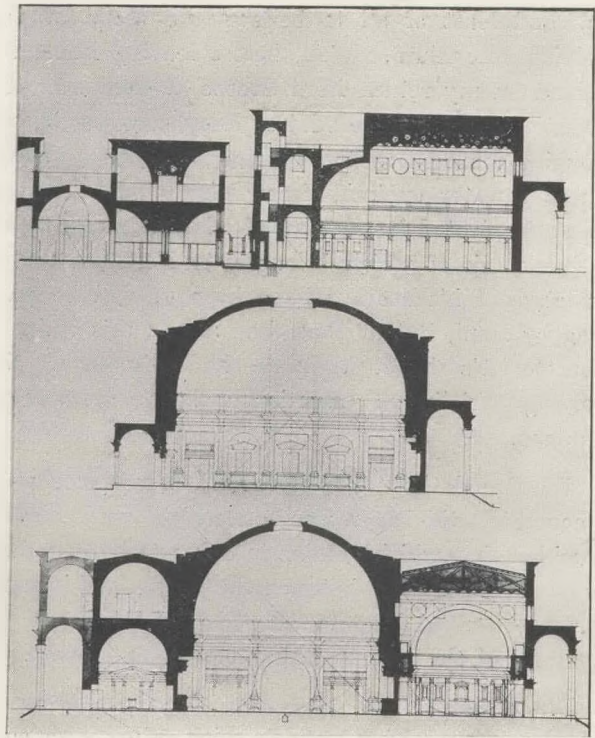
Two of the eight basalt statues that occupied the Aediculae were located in the Museum at Parma, where they are lost among a plethora of paintings and, for lack of space, can neither be photographed nor seen

to advantage. Of the general treatment and proportions of this apartment there can be little room for doubt. The treatment of the marble panelling is clearly indicated by the position of the bronze cramps that were used for fixing it. The architectural order, reconstructed on the basis of the Forum Transitorium, reached a height (with Attic and Podium) equal to half the span of the room; with this happy ratio, and the Pantheon as prototype, there is nothing left for the reconstructor to do but to throw the vault across its gigantic void.

The Basilica, which adjoins the side of the Aula, is of peculiar interest by reason of its plan. It appears that Rabirius, architect of the Palace, in casting the shape of this apartment, created the prototype that characterised the early Christian Church, a form which prevailed even in mediaeval days as the Chancel and Apse. The walls of the Basilica appear to have been rather lighter than requirements demanded, and had to be greatly strengthened by Hadrian in less than a century after being built.

The Palace suffered severely through earthquakes that occurred at different times during its existence; the last of these appears to have caused an earth-split, as the walls along the central axis of the Palace are separated by a break no less than six inches wide, and for which in measuring up provision had to be made.

There being no windows in the days of Domitian, it is interesting to see how the Roman architect managed to light and ventilate apartments without exposing them to the winds and rain. Occasionally hypaethral openings were provided, but, generally speaking, light, as in the case of the cloak-rooms flanking the vestibule, was admitted into a court or area, the walls of which were carried up to a considerable height and were decorated with columned *adicaulae*, containing statuary. The light and air thus introduced was transmitted either directly or through *cizycene* screens into the apartments to be lit. Such light wells were naturally open to the air above, and were therefore provided with delightful *impluviums* of marble and alabaster for the reception of rain water. At night great marble candelabras were disposed about the building, and no doubt torches and braziers of bronze were used to light the more exposed parts of the building.



Sections through Aula Regia Lararium and Basilica showing geometrical co-ordination of the various parts.

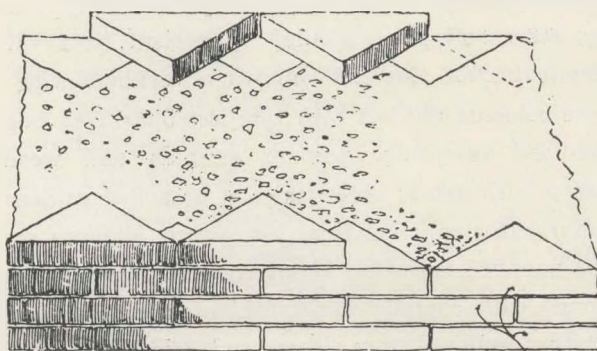
One of the surprises of the excavations was the discovery of Neronian walls below the floors of the Palace; as we are about to touch on the Golden House of Nero, I will venture to give Lanciani's description of it, as compiled from authentic data:—

"A park one mile square laid out by Nero after the fire of July, '64—it is enough to say that it contained water-falls supplied by an aqueduct fifty miles long; lakes and ponds shaded by ancient trees with harbours for the imperial galleys; a vestibule with a bronze colossus 120 feet high; porticos 3,000 feet long; farms and vineyards, pasture grounds and woods teeming with game; zoological and botanical gardens; sulphur baths supplied from the *Aquae Albulae*; sea-baths supplied from the Mediterranean; thousands of columns with capitals of Corinthian metal; hundreds of statues removed from Greece and Asia Minor; walls inlaid with mother of pearl; banqueting halls with ivory ceilings, from which rare flowers and costly perfumes fell gently on the recumbent guests. More elaborate still was the ceiling of the State Dining Hall. It was described as spherical in shape, carved in ivory, so as to represent starry skies; and kept in motion by machinery in imitation of the course of the stars and planets."

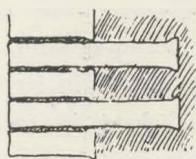
Sceptics will be disinclined to credit this description, and least of all to believe the story of the revolving Triclinium. Well, before leaving Rome for England on my return from Greece, I went over the excavations with Commendatore Boni, and was shown an engine room below the floor of Domitian's Atrium (it was a water engine), from which ducts led to the centre pivoted foundations of a large circular room, the brickwork of which belonged to Neronian times. The details of this discovery have been, or will be, published by Boni, but at that time it was this eminent archaeologist's belief that he had discovered the revolving Triclinium mentioned by contemporary historians.

The foundation walls of the Flavian Palace were of concrete, the aggregate of which very closely resembled that which obtains in Johannesburg to-day. They were usually cast between shuttering, and in some cases were carried down to a depth of 64 feet below the floor level of the structure they served to support.

Walls above floor level were faced with small triangular bricks about $1\frac{3}{4}$ inch thick, filled with concrete, composed chiefly of marble chippings, tufa, broken tile, and brick (this is significant), the average thickness of the brick skins was two inches, and was the same for walls of 15 inches as for those that were 9 feet in thickness. Roofs were covered with marble tiles and ridging, many fragments of which were found. Externally the building was very simply treated, and was surrounded by a portico of 30 inch columns, the walls below being plastered with mortar composed of pulverized marble as aggregate, and calcined marble as matrix.



DETAIL SECTION FROM BONI



DETAIL SECTION OF WALL SHOWING CVT. FACE

The Palace was set out on strictly geometrical lines, a single modulus obtaining for the varying proportions as prescribed by Vitruvius, the orders were set out and executed with the utmost refinement and technical precision, over a dozen different ones being accounted for during the excavations. Most of the friezes were decorated with foliated scrolls, between which huntsmen with spear in hand, stags, wild boar, leopards, and lions appear at intervals. On others the figure of Victory appears holding a wreath of laurel or banner over trophies of war, or in the attitude of sacrificing a bull.

Griffons and Cherubs lighting altars or candelabras are not infrequent. Besides these the site is strewn with fragments of every conceivable size and form. Exquisitely carved Nereids riding on Dolphins, no more than a few inches in height, appear to have contributed towards the embellishment of the fountains, the statuary increasing in size by stages till it culminates in a Colossus, the foot of which is the only remaining evidence of its existence.

I must admit that my computation of the original height of this figure may be on the generous side; whether the statue was carved out of a single block of marble is not known, but it certainly might have been, since we are told that the bronze colossus of Nero made by Zenodorus and erected in front of the Golden House was no less than $99\frac{1}{2}$ feet in height.

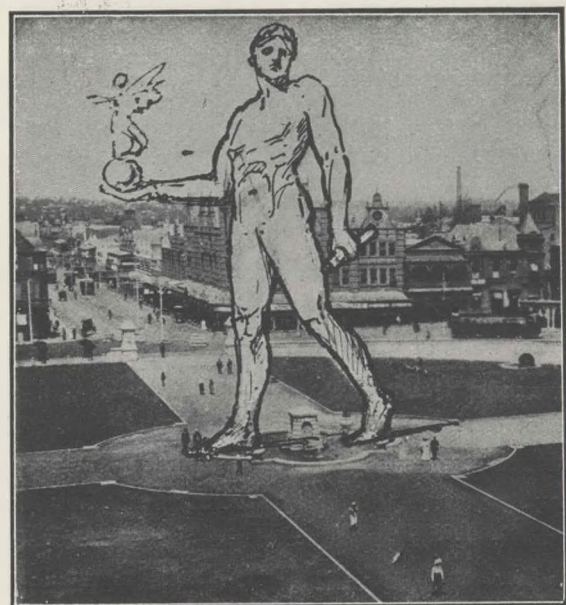
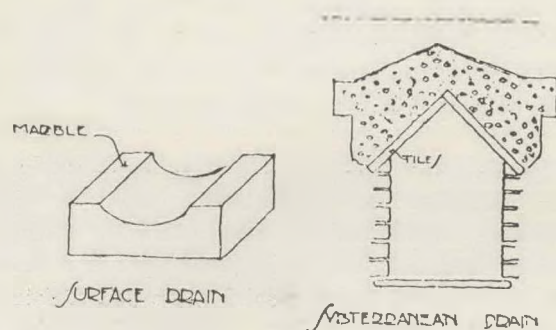


Illustration showing the size of the Colossus of Nero as it would appear if placed in the Church Square, Pretoria.

Lanciani gives it that after the Emperor's death the face of the statue was altered to resemble Titus,

and converted by the addition of a halo of rays, each 21 feet 8 inches long, into a statue of the Sun. This enormous image was removed a distance of about 1,000 yards in A.D. 121 to make room for Hadrian's Temple of Venus and Rome; the displacement was carried out by the architect Demetrianus with the help of 24 elephants, the statue remaining all the while upright and suspended from a movable scaffold. In order to obtain an idea of the size of the figure, I have drawn it to scale as it would appear if placed in the middle of Church Square, Pretoria.

The Romans paid great attention to drainage and introduced many sanitary appliances that are considered modern to-day. Water when not conveyed in aqueducts and channels was conducted in heavy welted leaden pipes, rain water pipes of stoneware were grouted into chases in the walls to receive them. Underground conduits, notably one running down the centre line of the building, served to carry off rain water and overflow from fountains.



Of the Emperor Domitian, we hear that he was detested by the people, and that after his death the Senate declared his régime in "memoriae damnatio." Tacitus, who scoffs at him, tells of his having waged war on flies—while other Emperors conquered nations; he ridiculed his punitive expedition to the Danube, and his conquest of the Rhine, and says they were merely hunting expeditions. Evidence of the truth of this statement is not lacking. Coming to the throne after the conflagration of Nero and Titus, he set about rebuilding Rome, and it must be said of him that he was one of the most ardent patrons of Art and the most prolific builder amongst the Emperors of Rome. As with Caesar, Nero and Caligula, Domitian met his death at the hands of assassins. It is recorded that he had a presentiment of his approaching end, and that on retiring to rest he was attacked. In the conflict that ensued, Domitian fought valiantly for his life,

beating his assailants on the head and face with a golden goblet.

His reign of 22 years was during the period of Rome's Golden Age, a time when no doubt it required a great man to keep pace with the wealth that the Empire was accumulating. It is possible that many thousands of Jewish prisoners captured by Titus were made to serve the State, and that they contributed in no small degree towards the rebuilding of Rome.

Of Rabirius, the architect who so perfectly co-ordinated this great structure, we may say that he interpreted in his work the spirit and taste of his lord and master, and that he has been immortalized by Martial in the following epigrams:—

"Rabirius, thou who dost raise with wondrous art the Parrhasian house, hast conceived in undefiling thought the starry sky. Should Pisa wish to raise for Phidian Zeus a fitting temple, she would crave from our Thunderer thy craftsman's hands."

In a subsequent epigram the poet refers to the architect's parents:—

"In the earth beneath Rabirius placed those he loved full well.

"Never did a more glorious end bring man and wife to the grave. For one last gentle night closed twelve lustres of married life and two corpses were burnt on a single pyre."

At the conclusion, the Chairman proposed a hearty vote of thanks to Mr. Leith for his interesting and instructive lecture. This was carried with acclamation and a wish expressed that the lecturer would be able to continue at a future date the interesting subject of the results obtained during his association with the excavation of the Palace.

The war memorial, to commemorate the names of the members of the mines controlled by the Johannesburg Consolidated Investment Corporation, Ltd., designed by Mr. Harold W. Spicer, 31, Cullinan Building, Johannesburg, of which we give an illustration in another part of this issue, lately arrived from England and has been erected in the Board Room of the company's building in Fox Street, Johannesburg, and forms a delightfully striking addition to the furnishings of that building. The pity is that such an excellent design, perfectly executed, should be erected in this inconspicuous position.

THE NATAL INSTITUTE OF ARCHITECTS.

The annual general meeting of members of the Natal Institute of Architects was held in the Secretary's Office, 18, Field Street Buildings, Durban, on the 9th March, 1923, at 3 p.m. The president (Col. G. T. Hurst) in the chair. Ten members and the secretary were present.

PRESIDENT'S REPORT FOR THE YEAR ENDING MARCH, 1923.

Gentlemen,

Upon the close of my term of office as president of the Natal Institute of Architects, to which honour I was elected in February, 1922, I beg to submit my report upon the work and activities of the Institute during the past twelve months. Departing from the usual custom of my predecessors in this chair, I do not propose to deal with the progress of architecture during the year, its aims and aspirations, its influence upon our people and country and times, or any other cognate abstract consideration of our art, but to confine myself simply to our own little Institute, to what it has done or left undone and, belike, to what it hopes to do in the future.

MEETINGS.—Six ordinary and two special meetings of the Council have been held, the volume of business to be transacted not having called for greater frequency of meeting.

The attendance of members has been as follows: G. T. Hurst 7, L. Mason 6, W. S. Payne 6, B. V. Bartholomew 5, W. Paton 4, F. J. Ing 3, and E. O. Payne 3. It is much regretted that the last-named, your vice-president, had to remove up-country last year owing to ill health, hence his inability to put in more attendances. I feel sure you will all wish him a speedy return to health and activity amongst us.

INCREASE IN MEMBERSHIP.—Our membership has been increased during the year by two new admissions, and the decrease of one member has to be recorded; balance to the good, one.

LEAKAGE OF WORK.—Your council records with regret that despite past efforts to check the practice, considerable pirating and filching of architectural work is still going on in the town to the hurt of our members and mostly with no good to architecture. It would seem that nothing short of statutory qualification and registration of architects will have much effect in remedying this evil.

BILLS OF QUANTITIES.—It has long been felt that the present limit of £1,500 in regard to jobs for which quantities must be furnished to contractors is too low, and bears hardly upon small owners as well as upon the profession. At the last meeting of your council it was resolved to approach the Master Builders' Association with a view to the raising of the limit to £2,500, and the matter has been set in motion to that end.

ARCHITECTURAL CONGRESS.—The Second Congress of delegates of the South African Architectural and Quantity Surveyors' bodies was held in Capetown from 10th to 13th January last. I attended as your delegate. The principal matters discussed and dealt with were the Architects' Act for S.A., Universal S.A. Conditions of Contract and Town Planning, which subjects are dealt with seriatim hereunder. The cordial thanks of all the delegates are due to the president and members of the Cape Institute of Architects for their hospitality and for the trouble they took to make the Congress a success and the short stay of the delegates in their midst enjoyable.

ARCHITECTS' BILL.—For a year after the Architects' Congress of September, 1921, a special committee, appointed by that Congress sitting in Johannesburg, was closely engaged upon the drafting of a bill for the statutory qualification and registration of architects for the Union. A copy of the bill has been posted to members of all constituted architectural and quantity surveyors' bodies, as well as to unattached practitioners. The bill has drawn from several quarters threats of determined opposition directed almost wholly against the quantity surveyors' chapter of the bill. The opposition comes, it may be noted, chiefly from an influential section of the quantity surveyors themselves, and the civil engineers are right up against it on the grounds that it would interfere with time-honoured practice in their profession. The inclusion of the chapter is undoubtedly the weak part of the bill. Your delegate, fortified with a previous expression of opinion from members of the council, which was tantamount to a mandate, fought against the incorporation of the quantity surveyors' chapter in the bill, and ultimately moved that it be eliminated, and the architects' bill be proceeded with on its own merits. This, however, was negatived, but the proposition was noted in the minutes for consideration by the executive committee when they overhaul the bill. At our last council meeting a resolution was passed reaffirming the opinion

of this Institute that the quantity surveyors' chapter should be dropped entirely, and a copy of that resolution has been transmitted to the executive committee in Johannesburg.

CONDITIONS OF CONTRACT.—Resulting from the First Architects' Congress in Johannesburg in September, 1921, which two delegates from this Institute attended, and after a conference with the executive of the S.A. Federation of Master Builders' Association, which took place at the same time, a new set of conditions of contract, designed to be universal to South Africa, was born and was issued for adoption throughout the country. No document of this nature can be perfect, or applicable or suitable in every clause and sentence to every varied condition and circumstance obtaining in the whole Union, but it was the outcome of long and serious efforts to produce an equitable and comprehensive set of building conditions. At the last Congress in Capetown in January these conditions of contract were the subject of a good deal of discussion as the outcome of about twelve months' experience of their use, particularly as regards the period of responsibility of the contractor after completion of his contracts. Ultimately it was decided to give the conditions a further trial of twelve months, when, if necessary, they would again be considered by the executive committee with the view to improvement, but it was made quite clear that there is nothing to prevent contracting parties from modifying, adding or expunging any clause or part of the conditions by mutual agreement whenever desirable or necessary in particular circumstances. To this last, however, the Federation of Master Builders' Associations have raised a protest, holding that the conditions are absolutely unalterable—as the laws of the Medes and Persians, in fact. Architects and building owners will, of course, have their own opinions upon this attitude of our friends the builders, and probably upon the attitude our friends would take up if it were found that any part of the conditions operated adversely to their own interests.

TOWN PLANNING.—In June last, a Natal Town Planning Association was formed in Durban. I hardly need say that one of the objects of such associations is to mould and focus public and official opinion in regard to the importance of proper town planning, with the ultimate object of the passing of a town planning act for the Union, as other countries have. It is to be noted, however, that the new association has not met with great support from the architectural profession in Natal; whereas in the Transvaal the architects are amongst the strongest supporters of the T.P.A. there. Town planning was one of the matters discussed at the last Congress in Capetown, and resolutions were adopted designed to forward its interests.

MUNICIPAL WORKS.—During the year your council has not lost sight of a resolution of the Durban Town Council, where it laid down as a principle that public competition shall, wherever possible, be resorted to as regards the designing of municipal buildings of an important architectural character. Some correspondence between this Institute and the Town Council has passed as regards the contemplated departmental carrying out of the proposed combined Summer Palace and Winter Garden at the beach, and it is hoped that the terms of the Council resolution referred to will still be regarded by the powers-that-be as the rule and not the exception.

TENDERING.—You will have noted with satisfaction a recent resolution of the Master Builders' Association in Durban to abandon a regulation adopted early last year under which no member of that Association be allowed to tender to anybody except to the Government and Municipality, in competition with non-members. This, of course, was only "nuts" to non-members, and put architects to a great deal of embarrassment and limitation, and I feel sure that you will commend the M.B.A. upon their abandonment of an inherently weak and untenable position.

NATAL ASSOCIATION FOR THE ADVANCEMENT OF SCIENCE AND ARTS.—During the year this Institute has become affiliated with this Society and has representation upon the controlling body.

THE R.I.B.A. AND REGISTRATION.—After many years of agitation on the part of the bulk of the architectural bodies in Great Britain allied to the R.I.B.A., that body has at last produced a bill for the statutory qualification and registration of architects which is to be submitted to the British Parliament as early as possible. If this bill becomes law, as it is sincerely hoped it will, it will greatly assist the S.A. architects in their efforts to the same end in this country.

DURBAN WAR MEMORIAL.—The "Fight for the Site" of this memorial which lasted for a couple of years need not be gone into here. This Institute took no mean part in the earlier stages of the controversy, and when the Town Gardens site was decided upon a sub-committee of the council drew up the conditions of the competition for the design, submitting suggestions as to the general idea, and nominated one of the assessors. You all know the subsequent determined effort on the part of certain interests to have the memorial placed just where they wanted it, and the outcome of the discreditable wrangle which followed the first decision of the Town Council, in which, be it noted, this Institute took no part or side, but on the other hand your council adopted a resolution definitely dissociating the Institute from any further connection with the dispute.

GENERAL.—It is to be recorded with satisfaction that the Institute has been consulted on a number of occasions during the year by sister associations, public bodies and others upon various matters of mutual concern. Every endeavour has been made by the council to justify this confidence, either by co-operation, assistance, furnishing information, and in one case appointing a member of the Institute to act upon the Technical Committee of the new Durban Sports Grounds Association, and in another case of appointing a member as arbitrator in a dispute between owner and architect.

I think that here and now is a fitting opportunity to express on behalf of the profession our regret at a recent report that the Building Inspector of the Durban Corporation, Mr. W. W. Batchelor, is shortly to retire. I am sure that you will all agree that in Mr. Batchelor the profession, the builders and the building public have always found a friend, capable in his profession and in the discharge of his often exacting duties, ever courteous, obliging and helpful towards the public, ready to listen to reason and full of common sense, but, withal, a sharp thorn in the flesh to the chancer and building evil-doer, and that the position he has occupied so long will not easily be filled by another. I feel that I am only voicing your sentiments when I say that our best wishes go with him.

In conclusion I wish to record my great appreciation of the support and assistance I have had during the year from the members of the Council of the Institute, who have fully justified your confidence in electing them. They have always been ready and anxious to give of their best to the interests and objects of the Institute and to uphold the ancient and honourable traditions and status of the profession.

With the exception of the President, who is *ex-officio* a member of the succeeding Council, the members of the Council retire by efflux of time to-day, but are, of course, eligible for re-election, but Mr. E. O. Payne, for the reason already given, does not offer himself for re-election.

Your secretary, Mr. T. H. Chaplin, has carried out his duties efficiently and zealously, and to him the thanks and appreciation of the Institute are due.

A hearty vote of thanks was accorded Col. Hurst for his year of presidentship.

The following gentlemen were elected to the Council for the ensuing year:—Messrs. F. J. Ing (President), W. S. Payne (Vice-President), Col. G. T. Hurst, W. Paton, B. V. Bartholomew, W. G. Moffat and H. E. Chick.

EDUCATIONAL.

The following communication received from Mr. Everard J. Haynes, Secretary to the Board of Architectural Education of the R.I.B.A., will be submitted for consideration of delegates at the proposed Educational Conference to be held in Durban on July 9th.

The Council of the Royal Institute of British Architects have decided to hold an International Congress on Architectural Education in London in the autumn of 1924.

The Congress will consist of special meetings for the purpose of considering the history, position and prospects of architectural education with special reference to the following points:—

- Revision of the methods and system of obtaining professional qualifications.
- Sources of study. Use of travel.
- Prizes and awards of honour.
- Preliminary studies.
- Detailed subjects: Draughtsmanship. Study of history. Practical handwork. Professional journals. Contract with works.
- Examinations: Standards. Relation to practice. Paid examiners.
- Promotion of post-graduate studies: Relation to preliminary and general education.

These meetings will be held for formal and informal discussion. Arrangements will also be made for:—

- Social intercourse.
- Visits to schools, museums, places of interest.
- A reception.
- An exhibition.

Architectural education is at all times of vital importance to architects. It is felt that from time to time it should be the subject of an international Congress, and it is hoped that an exchange of ideas will lead to valuable future developments.

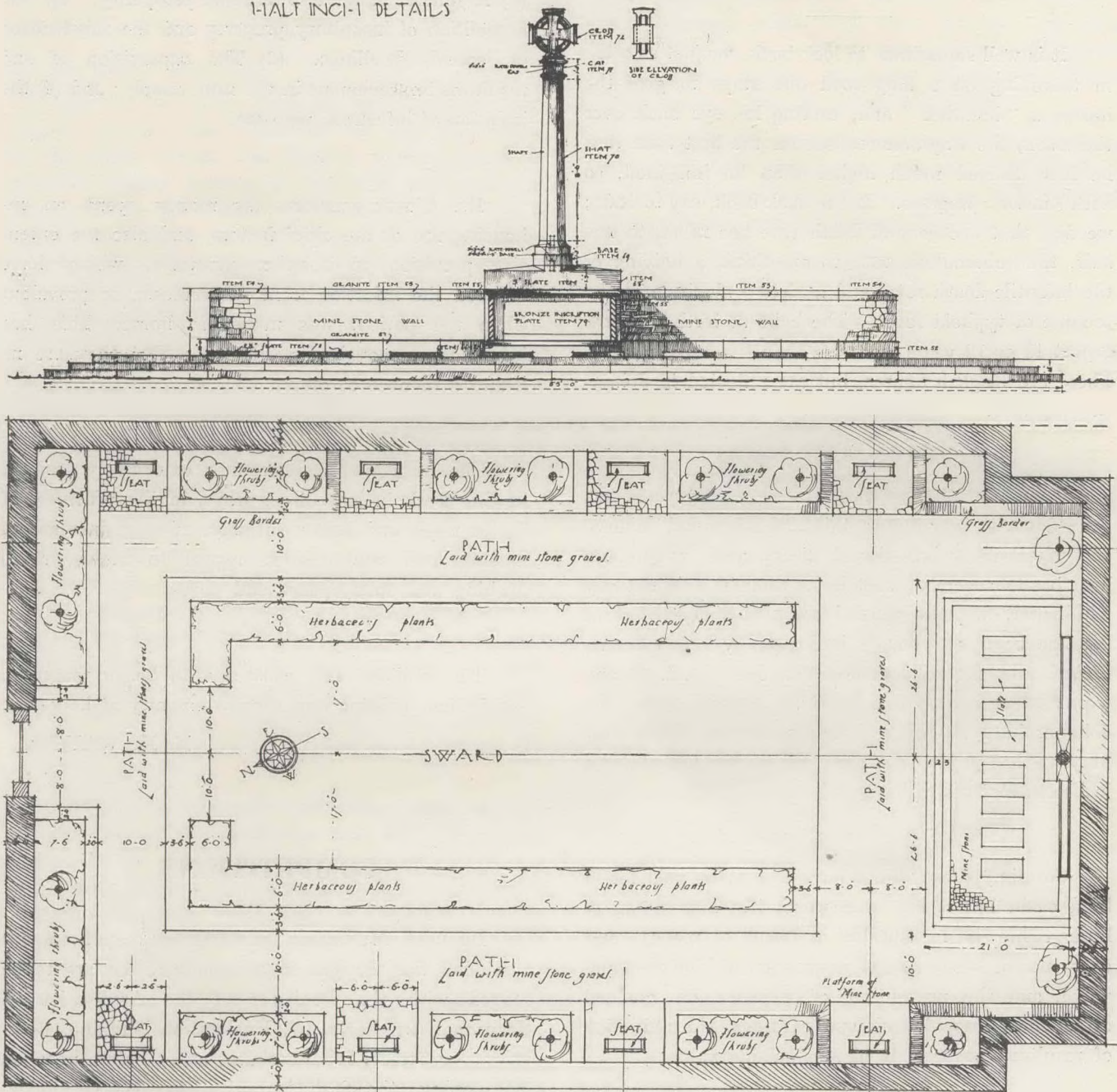
The Organizing Committee of the Board of Architectural Education will be extremely grateful for your co-operation in bringing the Congress to the notice of all the more important Schools of Architecture in your Province.

Members desirous of submitting proposals should communicate with the Registrar, Box 2266, Johannesburg.

Mr. D. M. Burton, F.S.A., a past President of this Association and of the Town Planning Association (Transvaal), proposes to visit the Old Country at an early date on a pleasure trip extending over six months.

BRAKPAN MINES MEMORIAL. BRAKPAN.

1/4" = 1' DETAILS



This design, prepared by Mr. Allen Wilson, F.S.A., of Johannesburg, has been influenced by the circumstances under which the victims of the 1922 disturbance were buried.

It will be remembered that certain mine officials and police officers were taken out, shot and buried behind the mine offices some 700 or 800 feet from the Main Reef Road.

Although the victims were buried in a common grave, it was thought that the best effect would be obtained by maintaining the principal of individual grave and at the same time having a memorial that would link them together.

The graves have been raised on a platform of

mine stone with granite steps and are marked with slate slabs with the name and age of the victims being inscribed on each.

The low retaining wall at the back links the graves together and the Cross and slight suggestion of an altar in the centre completes the design.

The Cross, approximately 20 feet high, will be seen from the Main Reef Road, and it was hoped that a vista would be formed by planting a hedge and so connecting the memorial up with the road.

The ground has been laid out in a very simple manner so that it will not compete with the memorial in any way, but at the same time will provide a suitable setting.

SANITARY NOTES.

It is well sometimes to look back, for just as often in travelling on a long road one stops to give the horses a "breather" and, casting his eye back over the track, the wayfarer realises for the first time that he has climbed much higher than he imagined, so with sanitary progress. Let us look back, say to 1866; we find that the general death rate has fallen to one half, the tuberculosis rate to one-third, a halving of the infantile death rate, and a virtual abolition of the scourge of typhoid fever. The babe at birth can now expect 11 or 12 years more life than the babe in 1866. These are English figures, but are reflected in Johannesburg also.

* * * *

Here, the infantile mortality in twenty years has gone down to less than a third, the frequent scourge of typhoid fever has almost disappeared, pneumonia has been severely scotched, though not entirely eliminated, and the general amenity and comfort of life has been enormously increased by better roads, drains, and the reduction of the dust fiend. Many words of praise are due to Dr. Charles Porter, the Johannesburg M.O.H., whose unwearying efforts over 21 years has produced a town which can hold its own in health matters with any other.

* * * *

Certainly these things have had to be paid for in hard cash, but it has been worth it. The saving of human life is measurable in terms of money, and every useful life prolonged is an asset of high financial value, and the prevention of expense on medical attendance, loss of work and earnings, the reduction of resultant poverty, is of incalculable value.

* * * *

Dr. Glover, Chief Assistant Tuberculosis Officer, Liverpool, has recently recorded that in 1847 there would have been four times the deaths from tuberculosis than at present. In 1875, there would have been twice the deaths, and since 1900 they have fallen 33 per cent. In Liverpool last year 1,342 tuberculosis patients were lost. In 1866 it would have been 3,542. On the average, from 1906 to 1915, 300 lives were saved. This life saving has reduced sickness and secondary poverty, because of the protracted character of the disease leading to the earner stopping work entirely.

Four main causes have operated to this result:— (1) A general increase of national prosperity. (2) The demolition of insanitary property and the substitution of sound dwellings. (3) The supervision of and resultant improvement in the milk supply; and (4) the isolation of infectious patients.

* * *

Dr. Glover considers the money spent on rehousing one of the chief factors, and also the extensive provision of isolation sanatoria, which have reduced the infection from tuberculosis, so prevalent when the patient was nursed at home. This has led to the removal of patients, so that they are no longer a menace to others.

* * * *

The municipal engineer has extensively assisted in this work in less direct ways, in the provision of better roads and better surfaces, and the increase of amenity and sanitation in regard to drains, drain flushing and open spaces and parks.

* * * *

The architect has assisted with better planning, ventilation, lighting and general amenity of houses.

E. H. WAUGH.

COMPETITIONS.

BRAKPAN MUNICIPAL BUILDING.—Competitors are reminded that designs in this competition are to be lodged with the Registrar of the Association of Transvaal Architects, 67, Exploration Building, Commissioner Street, Johannesburg, on or before noon on Wednesday, the 20th instant. Mr. H. G. Veale, F.S.A., is the professional assessor.

STRAND PIER AND PAVILION.—Members are reminded that the conditions governing this competition are not in accordance with professional requirements, and are again requested to refrain from taking any part therein until such time as the conditions have been amended to the satisfaction of the Councils of the Cape Institute of Architects, The Natal Institute of Architects, and the Association of Transvaal Architects, who will advise their members immediately the conditions have been suitably revised.

QUANTITY SURVEYORS AND STANDARD OF MEASUREMENT.

To the Editor, *Building*.

Sir,—It is quite natural the quantity surveyors should raise objection to the publication of the above article, but there is another party to consider besides themselves—the man who pays—on whose behalf the article was written. In the two-and-a-half pages in your March number professing to criticise, the client seems to have been overlooked. His interest the architect is paid to watch, being fair to the builder at the same time.

I remember quite well here in the early days, when quantities were produced in a very slovenly fashion, "No. 1 staircase 19 risers," "Allow for all items in this trade (painter) add 2½ per cent. for quantities," Builders accordingly suffered, or gained more than they should.

I recognise that the quantity surveyors did good service in compiling a standard. As a *first edition*—an excellent one; I use it myself. The world is presumably striving for perfection in all departments, for which reason standard works undergo revision from time to time unless simply records. Judging from the three letters appearing in your March issue, when the standard of measurement was published *ten years ago*, the last word had been said on the subject. Absurd!

Whilst the first and third letters show restraint on the part of the gentlemen who wrote them, the author of the second has allowed his feelings to run away with his pen, and has indulged in personalities and abuse, pretty much what the lawyers describe as "no case, abuse the opposing counsel." It always shows a dearth of argument.

Complaint is made that I wrote anonymously. Your correspondent has given excellent reason for my doing so; besides, the subject is not persons but principles, and it is immaterial who voices them. No doubt it is more comfortable to follow the line of least resistance; be an "echo," in other words. The world will never progress that way. There is no standing still.

The article was unfortunately and unfairly to the writer not printed as typed, for which you, Sir, are not responsible as a very busy practitioner, but some layman who thought he knew better, altering the capitalising of pronouns of which the second letter complains. Some humour was introduced to make the article a little more palatable, but it seems to have been lost on your correspondents. It is a good thing to cultivate a sense of humour: it keeps a man sweet and helps to heal differences.

The Council of the Quantity Surveyors Institute state in their letter, it is unnecessary for a builder to have drawings beside him when pricing. If stock work, that is so. If it were possible to describe architectural detail, architects might do without drawings too. But they are not likely to.

The quantity surveyors instead of taking umbrage at constructive criticism and adopting an attitude of perfection should look into the matter and remember those who pay and not become lopsided.

I am, Sir,

"EQUITY."



Reproduction of plaque in cast bronze mounted on polished Connemara marble.

ARCHITECTURAL BRONZE

and other Metals

for . . .

CHURCH FITMENTS
BANKS
BUILDINGS
RESIDENCES

and Memorials of every description.

YOUR PLANS AND SPECIFICATIONS
FOR ESTIMATES WILL BE
APPRECIATED BY

MURRAY K. CARPENTER,

67, Exploration Building, Johannesburg.
For the BIRMINGHAM GUILD, LIMITED.

FOR EXEMPLI.

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

The revival of Roman art flagged seriously during the seventeenth and eighteenth centuries. Not only was the detail degraded, but the general conception also. Many of the minor arts such as enamel on metal, staining glass and textile work, and embroidery upon textiles, as well as painting, which was the glory of the early renaissance, receded to a position far below the pitch attained by the mediaeval artists, and had, though the movement was not stopped, been seriously checked.

The religious changes, simultaneous with the *volte face* in art, had also received a check. The teaching which had been rejected with scorn and bitterest opprobrium, though continuously upheld by a small minority, even in the countries where the new doctrines were apparently supreme, was winning attention, and generally a change was desired.

The appearance of a succession of brilliant romantic writers, in conjunction with the great musicians, who, with them, kept the soul of art alive, turned men's attention to true art—as represented by the mediaevalists—the first and, in the west, the last that had permitted all the works of nature to live in and, later, to influence its work.

The more recent and in greater sympathy with modern work, namely, that of Japan, was not known in Europe at the time, and, of course, could not be made of use.

Subsequently, a type of student, afterwards called an antiquary, emerged, probably in his infancy about the middle of the eighteenth century. He was quite eclectic, a Greek or Roman or, for the matter of that, any ancient fragment was equally dear to him: effigy of some mediaeval warrior, the parts of whose armour and inscription he studied with painstaking veneration. But gradually his attention was arrested by the art treasures cradled in Byzantium, which had, with endless variety and majesty second to none, the reflex not of an order of a world-wide tyranny, but of the character and history of every country in Europe, and even of every district and division of those countries. The work, not of their Roman masters, but of their own ancestors, the men whose influence had moulded their characters, framed their laws, and fought their battles, and had given place, name and fame. This was the motive that turned the tide and checked the ebb and made the flow which lifted the mere dilettante study of mediaeval work to ardent high achievement.

There was a difference between the revival of mediaeval as compared with that of Roman work: there was a desire to repair and, when possible, to replace the parts of old buildings which had been wholly removed or made ruinous by those who did not value such work or who hoped by its destruction to discourage or even to prevent recurrence to the uses for which they were erected. This was for a time a parallel effort to the destruction of Roman buildings in what has been called the dark ages. But reverence for ancestry and old time customs and institutions, many of which were, though greatly modified, still in use, and esteem gradually arrested the hands of the destroyers and made the task of repair and renewal possible, and successful imitation more likely.

But the past cannot be recalled, and when time has set the hand of decay upon a building, no mortal can replace the parts abraded by its fatal touch, for it is again but dust and scattered far or mixed with its fellow dust of the earth below.

By the middle of the nineteenth century the work of the new enthusiasts had become secure and both architects and craftsmen able to work successfully in the new manner. Their difficulties were much greater than those of the Roman revivalists, as much more difficult as their examples were more numerous.

They had no five orders or types, each with its approved mouldings, carving and enrichments ready to their hands; no simple method of construction, but in place of these a scientific and often complex construction and continually changing methods of moulding, carving and enrichment, though seeming similar when studied by them, were not even similar at the same time in different places when erected, and even then the free design of the individual architect or craftsman who was responsible for the work stamped it with the characteristics of his own nation and individuality.

The work of this time has been very severely criticised, and often is now very adversely, as if it was an easy thing to copy so complex a work as a mediaeval building even of moderate dimensions. In all such attempts those interested are in the same dilemma. They can indeed make slavish copies, but that is useless. What is needed is the ability to work freely in the same manner, so as to meet the necessities of the work in hand with the same success as that exhibited who put up the buildings being used as models.

That is proposing that the man who is driven by whatever circumstances to change his habits of thought and work should at once be the equal of him who, working and thinking as his fellow for a century or more before him had worked and thought, should have that easy command over the work he is painfully studying as the master who wrought it. Quite clearly that is not likely to happen. It takes more than a generation or two to make such a change.

In spite of these difficulties and discouragements, all Europe was soon engaged in building or rebuilding in this manner, and at the same time the lesser arts, such as those named, ornamental metal work, glass staining, enamel carving, and decorative painting embroidery and weaving textiles, made great advances. As a consequence of this movement, the painters, who for a long time past had been working at a low level compared with their predecessors of the sixteenth and seventeenth centuries, resumed serious work and made great progress, taking a place in the line of great artists not far behind those who had gained the name of the "great masters." Among these was a group of men who initiated a manner of work based upon the late mediaeval painting. But the painters of this time did not influence the architects to any great extent.

Like its predecessor, this movement had spent its phenomenal energy in less than a hundred years, and about the end of the nineteenth century had ceased to be regarded as the forerunner of a mode of thought likely to be universally adopted.

During the last quarter of the nineteenth and the early years of the twentieth century building in the mediaeval manner was carried on, it may be said, all over the world, in some places side by side with buildings of the former revival, of equal and sometimes of even greater importance, continuing through the nineteenth century, and is now by no means at an end of its career. The tendency of the times was mechanical in its manner, though it endeavoured to combine with it the freedom of the middle ages. In the Roman revival this freedom is more frequently shown in Italy, where the continuous arcade was firmly established by the original and beautiful treatment of it at San Sophia, and was handled with perfect freedom by the architects of the early days of the renaissance, and in the north this freedom appeared in the plans and general arrangements of many buildings and confirmed that reform which was begun in the days when the artists of Byzantium made that remarkable assay of freedom as opposed to bondage.

The two types have remained, and will remain, distinct in construction and design, and it may as well be set down at once that it is not a question of reserve or breadth or any other artistic quality, but

the removal of the rules by which the ancients endeavoured to stamp the supremacy of this or that nation as each gained strength in its own sphere upon all under its rule.

This so-called Gothic revival produced many buildings of great magnitude, magnificence and costliness, and of all kinds—domestic, municipal and official and ecclesiastical. At its greatest initial effort the range of its influence was greater than that of any other, extending as it did through all Europe, many parts of America, and every part of the British Empire, and many other countries, a much greater area being covered and more building done than by the Roman empire. It is probable and natural that the ecclesiastical work was more in evidence than any other, but in most cases these were repairs and rebuilding.

In France many great works were carried on at the public expense by Government in order to preserve historical monuments, not only their cathedrals and public buildings, but some of their ancient military works, such as the castle of Carcasomme, the walls of which enclosed a town and a cathedral. Great sums of money were spent on them, and they will, unless disturbed by some disaster like the late war, or some curious moral change such as that which produced the iconoclasts of ancient times, bear witness for many centuries to come of the perfect beauty and excellent majesty of that mediaeval work of which the revival is here noted, and which it was endeavouring to emulate and perpetuate.

This revival in the hands of a few men went far beyond mere imitation and produced works which were as freely designed as the actual work of the middle ages and, had there been available craftsmen of equal ability, would certainly have produced buildings which would have stood the test of close criticism more successfully than many mediaeval buildings.

Much time, however, had already been spent in training artists needed for the development of the minor arts, which had fallen to such a low standard as to be unequal even to do for the mediaeval revival what they had done for the Roman revival.

By degrees they emerged from the torpid condition in which they had passed the eighteenth century and early years of the nineteenth, when they were shackled with the precision and formality of the work of the Roman renaissance and also by the commercial tendencies of the times.

It is difficult to find a duplicate of any mediaeval work, if, indeed, any such things exist. It was very easy to find not only duplicates but stock patterns of the work of the second class designs of this revival, that could, if approved, be supplied in any quantity.

The mediaeval craftsman wrought for living work, which he easily modified to the type required. The Roman revivalist left so little original work that even the manner of making various accessories such as were required for furnishing was forgotten.

The work of the middle ages was now studied with the greatest minuteness and enthusiasm: every work which gave instructions in their methods, every drawing or representation in wall painting, sculpture, stained glass, in fact everything great or small, was made the most of in order to fathom, if possible, the methods of the workers, but, as formally happened, the force of the movement was spent before the result desired was reached, and the work which should have perfected the mediaeval revival was handed on to the latest phase of architecture, namely, that of our own time.

The Roman revival, though continued during the eighteenth and nineteenth centuries, was itself in a state of transition, and when late in this period it began to make new headway, it had some reason to assume the name "classic," now usually applied to it, for the study of Greek as well as Latin had given that name to all the literature of the ancients, and was extended to architecture.

The study of Greek orders, which was very different, had many surprises for students of Latin work, not only as to the orders, but the general

excellence of it as compared with Roman work in every detail and the positive supremacy of its sculpture. These studies brought the classic architecture forward again, and much Greek work was reproduced with considerable fidelity. But the expensive nature of this manner of work, owing to its extraordinary refinement, made any general adoption of it quite out of the question. Although it has advocates, it is not likely to solve the problem which is so often proposed as to a new style for the future.

The classic revival and the Gothic or the mediaeval revival each have led to similar results, architects generally, as far as they are permitted by circumstance, take a looking-glass method of design. They like to reflect the things of the past. The past was always strong to demand the best manner for the work of its time; the best for the moment troubling itself very little about yesterday or to-morrow, but day by day improving its work "to its power," as they would have expressed it. This example should be our guide at the present day.

A movement is on foot to prompt an architectural competition for a design for a suitable internal fitment for the South African Pavilion at the British Empire Exhibition, which is to be held at Wembley Park in 1924.

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NOTES AND NEWS.

Mr. W. B. Turner Newham, A.R.I.B.A., has joined the staff of the Public Works Department, Pretoria.

* * *

The telephone number of Mr. E. J. Wellman, F.S.A., of 6, Grosvenor Chambers, Loveday Street, Johannesburg, is now 1338 Central.

* * *

Copies of the Standard Conditions of Contract can be obtained from the Registrar, Box 2266, Johannesburg, price 6d. each, plus postage.

* * *

We regret to record that Mr. Harry Bell-John, the esteemed divisional Engineer of the Public Works Department in Johannesburg, has been seriously indisposed, and we trust that the operation he has lately undergone will be the means of restoring him to perfect health.

* * *

Mr. E. H. Waugh has received an intimation from the Royal Sanitary Institute that he has been selected as one of the limited number of members to

be transferred to the higher grade of Fellows of the Institute. He has been on the South African Examination Board for fourteen years.

* * *

Bulawayo is to have a war memorial, for which Messrs. Frank Scott & Robertson have been appointed architects, and the Birmingham Guild has been commissioned to execute, in cast bronze, an enlargement of the regimental badge of the Southern Rhodesia Volunteers as a portion of this memorial.

* * *

It is proposed to hold a conference of delegates representing all the Union architectural bodies at Durban in August, to discuss the subject of "Architectural Education for the Union" and, in view of the alliance of this Association with the R.I.B.A., to consider the promotion of a Chapter for South Africa.

* * *

We have been advised that the old building by-laws of the Johannesburg Municipal Council have been re-printed and are now available for issue. Practitioners can obtain copies on application to the Architectural Branch of the Town Engineer's Department, Town Hall, Johannesburg. The price is 4s. per copy.

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