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THE CITY OF DURBAN



CONGRESS IN COMMITTEE

THE ARCHITECT IN RELATION TO THE COMMUNITY

By **S. N. TOMKIN, A.R.I.B.A., M.I.A., President of the Natal Provincial Institute**

The relationship which exists between the architect and the community is subject to such tremendous development within our own time that it is scarcely necessary to underline this fact in itself.

The tempo of this change has varied so considerably in the measure of time that there is a tendency to recall only the immediate past rather than the more dim historical background.

The simple fabric of early relationship in history between the architect and the community was a reflection of the comparative simplicity of the pattern of living of these particular times. The evolution of techniques scarcely outstripped the speed of building, and the architect—the master mason—held in his hands the close control of both the design and construction of his buildings. Employed by a clearly defined class of society with equally clearly defined aims, the architect's work was directed into obvious channels which enabled him to achieve a sincere interpretation of these aims, limited by the means of production of the period.

The break in the orderly evolution of architectural forms resulting from the complication of techniques brought about by the industrial revolution, commenced that period when the architect became divorced from his project. Building and architecture became widely separate functions and widely varying types of buildings became necessary for the new era of production.

With the change of the means of production, the needs of society changed. Production became more socialised; the individual craftsman who formerly created the finished product from start through all its stages to completion, gave way to the machine. From this time on, each contributed only a small part of the final finished product. Specialisation was ushered in and spread with ever-increasing speed—a system of specialisation which tended to work in watertight compartments and visualise the part instead of the whole of any problem.

This development of the elimination of the craftsman from the community at the same time eliminated from the community the craftsman's appreciation of the quality of the product, and replaced it with the ever-increasing, overpower-

ing influence of the economic struggle as a yardstick governing judgment.

In the scramble to produce goods quickly and in ever-increasing quantities, any type of building was considered good enough to house the new machine, and their operators. Factories sprang up spreading their sooty grime over the depressing row houses of the workers nearby. The pressure of production drowned the dazed, feeble cry of the architect for order and design in building. Work as a vital and educational process almost completely disappeared. Those people who heard the cry of the architect, replied: "Why in the name of all that is prudent and profitable, should the manufacturer pay for a metaphysical entity?" And the architect, still struggling to orientate himself to the new development, found it impossible during the normal short span of man's lifetime to master all the new innovations of building, as had his historical prototypes.

The education of the young architect has changed with the pressure of the successive new era. The student is called upon to design a multitude of new buildings needed by the regrouping of the community into concentrated cities. Within the large number of new types of buildings, a greater complex of elements requires to be handled in each individual type. The work and views of a multitude of specialists working in watertight compartments is now funnelled through the refining creative thought processes of architectural design.

With the unco-ordinated and rapid development of techniques and needs of the community, the architect was unable at first to emerge with final solutions. Instead, he was subjected to criticism from the multitudinous sources of the new specialists, and from the community which had lost its contact with the development of the new specialised production. Such critical attacks were often too strong for the emerging theories, not yet thoroughly proved in practice, to withstand.

At the academic source of architectural education, the necessary period for the evolution of the contemporary theories has been afforded, and the student who enters the course of architecture as an ordinary member of the community, emerges equipped with the means to solve problems that will need to be conditioned for the limitations of the existing social and economic order.

Emerging from schools of architecture where tuition is based on the best academic principles of solving architectural problems, the conscientious young architect is fired with the enthusiasm of tackling his work in the light of social developments, which do not as yet exist.

I do not wish to infer that the student has not been made aware of such social shortcomings, but rather to state that what appears to be a struggle for an architectural style or theory is almost as much a struggle for social reform at the same time. A formidable task for a fledgeling architect, that leads to a multitude of results varying in their records of achievement and failure.

The architect in South Africa had outstripped the development of the local building industry and the industrial and social background. With a wide knowledge of what is needed and with theories of how it is to be achieved, he tempers his design to the means at hand, and is forced into compromises at every turn. With a fluent vocabulary, the language spoken by the architect cannot always be understood as so many sections of the community have not yet learned all the words. The architect finds himself in the position where he is far more than co-ordinator of technical services and problems within the limits of his creative design—he is forced through working for profit dangerously close to becoming the passive interpreter of exactly what his client dictates. But his client is seldom the best person to dictate the architectural interpretation.

Through the means of his education, the architect acquires the ability to solve problems by responding sensitively to the influence of the needs of people and a host of specialists requirements. Add to these essential elements the powerful restrictions of the limitations of the building industry, the lack of social balance in the community, and the profit rather than the use impetus, and it is not difficult to understand the diversity of architectural interpretations which do not spring from a merely individualist diversity among architects themselves.

The varying success or failure of the architect has the effect of thinning the ranks of the pioneers. This factor the profession must recognise, and in the light of recognition see more clearly its function as a reformer.

Since architects build, in the final analysis, for men, our concern must be deeply engaged by what is happening to men. Since architects understand the importance of the planned community from the technical and aesthetic standpoint, we are engaged, by the very act of preparing such plans, in urging such social reforms.

As a first step we must realise this. As a further step we must consider that because others do not realise this part of our struggle to assist the community in its betterment, we must play some part in those organisations which seriously strive for this objective.

Without this clear definition to the community, of our place in society, much of our best work must appear "stunts"

and "fashions" to a people equipped with a superficial knowledge of unrelated technical advances, more or less sensational in character, but still remains a community uninformed on the question of planning and architecture in relation to a better life.

The responsibility of this better life lies ultimately in the hands of the state, representing the authority of the community. The Union Government authority, the Provincial authorities, and the City Councils must accept the full load of responsibility, and face up to the necessary reforms needed to re-organise living conditions on a balanced plan.

A necessary pre-requisite is to place in the hands of those people trained and equipped to guide part of this replanning, the full responsibility, authority and status to lead in their particular spheres.

The relations between Governmental authorities and architects have, over the past few years, shown marked improvement. This improvement is unfortunately, however, only a very late progress which has emerged when a crisis has long been in existence—a crisis which was easily foreseen by architects, and about the advent of which architects repeatedly warned the authorities.

Continued representations were met frequently with humiliating rebuffs, and it is in earnest of the architects' social consciousness, that when calls for assistance and co-operation have been received from public bodies by the profession, they have been met to the best of its ability. This collaboration has already shown marked success, subject of course to the criticism from the almost limitless sources I have mentioned earlier in this paper.

Despite this criticism, often harsh and overpublicised, the responsible parties find that the solution to many of its problems are only capable of adequate solution by means of this co-operation.

One would imagine that realising the importance of the profession as a whole, it would lead to the recognition of the importance of the individual architect within their own organisation. But this, with the barest of exceptions, has not yet come about. The status of the architect as head of his department, with full responsibility in matters of policy, lags steadily behind the needs of the community.

Within the power of governmental authority lies the opportunity whereby architectural standards, and their effect on society can be raised to higher levels. The architect with his long tradition of interpreting the needs of the community must be afforded the full opportunity to lead the necessary re-orientation of planning. This can only mean the granting of full authority and status to the architect in his own department within public authorities.

Only then will the planning layout of architectural work be conceived in social and personal terms rather than in purely economic and mechanical terms. Only then will the architect take his place in the community.

DISCUSSION

THE PRESIDENT-IN-CHIEF: Mr. Tomkin has read a paper which warrants very deep consideration. We are indeed grateful to him for it. Before inviting discussion I would like to say this. He has made reference to the spheres in which the Profession is assisting Governmental authorities. We have a very close liaison with the Public Works Department. Two of their members are on our Central Council: That is, Mr. Mullins, the Chief Architect, and Mr. Prentice, the Chief Quantity Surveyor. I am glad to say that the Profession is assisting the P.W.D., and we have reason to believe that they will require still greater assistance from us. We have given the assurance that all the assistance they require will be forthcoming.

In addition, we have a close contact with the South African Railways. And here I may say how glad we are to have Mr. Dry with us as the Railways' representative. ("Hear, hear.") The Railways have so far given our Profession a considerable amount of work. In regard to the Provincial Administrations. I can refer from my own knowledge to the fairly close liaison that exists between the Transvaal Provincial Administration and the Profession. We have our difficulties, but nevertheless the Profession is making a big contribution to Provincial work in the Transvaal. I understand that the Cape Provincial Institute has recently entered into an agreement with the Administration there, and the Profession is making a valuable contribution in that direction. I think Natal is doing the same.

At this stage I regret I am not able to say quite the same with regard to Local Authorities. We do know that in Pretoria and Durban at any rate the Profession is of considerable assistance.

As a broad outline, therefore, that indicates how the architect in the community is assisting Governmental Authorities. With that, I now invite discussion.

MR. MASEY said he firstly wished to pay tribute to Mr. Tomkin for his excellent paper. While it was true that the Governmental Authorities came to the Profession from time to time for assistance, when they were in difficulties, there were other bodies which seemed to come to the profession rather reluctantly. And, in fact, that happened with certain clients. They did not come voluntarily and willingly because they totally misunderstood the function of the architect in modern times.

The point he wished to make was the value of the services of the Architect to the Community, which should not be regarded merely in terms of bricks and mortar, but in terms of the health and happiness of the community. For that reason he wished to ask: "Did we, as Architects, get sufficiently amongst the public? Were we letting the community know the value of our services? For that reason he felt that we,

as Architects, should get on to public bodies who did not sufficiently appreciate who the Architect was, what his duties were, and what big bearing he had on the town and its amenities.

For the same reason he would like to see his professional brethren take a bigger interest in the life of a community; for instance by getting on to Town Councils. He recalled one instance where an Architect, after his election as a Town Councillor, resigned at the end of one year because of the inadequate appreciation of the Council generally of Architecture, or building, or Public Health. That was a regrettable step; the Architect concerned should have seen his three years through, and then another three.

Why don't Architects serve more on Town Councils and other bodies? One one occasion, in the days when he was President-in-Chief, on a presidential tour, he called on the local Mayor, who was a builder. Why shouldn't Architects also be Mayors of towns? He felt it would do the community good and it would do the Profession good. There were two or three instances where architects had been Members of a Provincial Council. But why shouldn't they have an Architect as a Member of Parliament?

Surely they could find a man with a leaning towards politics who could always find a thousand a year for himself; why shouldn't they give him another thousand a year and say: "Now, you become a Member of Parliament and protect our interests in Parliament"? The Building Trade did that in Great Britain, with Robert Burns; they sent him to Parliament, and he later became a Minister of the Crown. He was a plumber and he did a good deal for the Building Industry in Parliament.

He therefore urged that some Architects must be public spirited enough to become Town Councillors, or Provincial Councillors, or Members of Parliament. That would be all to the good of the country generally, and the community generally, and the profession. Couldn't they find a member of the Profession who would enter Parliament? It would not pay as well as his drawing board, but ways and means could be found of augmenting his income, so that the Profession could say, "We have a man of our own in Parliament."

THE PRESIDENT-IN-CHIEF thanked Mr. Masey for his contribution to the discussion. He had no doubt a great contribution could be made by both professions by participating in public life to a far greater extent than they had, in Town or Provincial Councils, and even in Parliament, whose members were often unaware of the functions of the Architect or the Quantity Surveyor. It was only by playing a more active part in the community that they could really advance as they wished.

THE DEVELOPMENT OF NEW BUILDING MATERIALS AND THEIR EFFECT ON BUILDING COSTS AND MAINTENANCE

By DOUGLASS M. COWIN, A.R.I.B.A., M.I.A., President-in-Chief

It was originally intended that the scope of this paper should be much wider, and should include also references to the effect of new building materials on architectural design. This has not been possible in the time available and on this subject I can only draw attention to the fact that the development of new materials must affect building design considerably; and to maintain the interests of the building public whom we serve it is incumbent on us as architects not only to keep abreast of developments, but to give a lead.

The war years gave a tremendous impetus to research in the field of substitute and new materials. There are but a limited number of these which can be of direct use in building and I shall deal briefly with some of the more significant.

PLASTICS

The first reference is to plastics, because with their introduction before the last war, intriguing speculations on their possible uses in building have been made by many enthusiasts, and while they are most promising materials for the future, the exact rôle which they can play has been greatly exaggerated. It is often emphasised that plastics must not be regarded as substitutes, but it is natural, when a new material is discovered, to compare it and describe its properties in terms of familiar substitutes. It is also natural that the first uses to which it is put are to replace some of the earlier materials to which it approximates. As experience of the new substance accumulates, it is seen to have characteristics of its own and it is in this light that we must review what has been offered so far.

More than twenty types of plastic materials are in production and these may be sub-divided into two main types, the "Thermo-setting" and the "Thermo-plastic," with a subsidiary group—the casein plastics. Thermoplastic materials have properties similar to the oldest member of the group—bitumen—which on the application of heat becomes soft and mouldable, and this process can be repeated indefinitely. It is obvious, therefore that thermoplastics are unsuitable for uses in which they may be exposed to heat. Thermo-setting plastics are powders which under the action of heat and pressure can be pressed to shape in heated moulds. While under these conditions, chemical changes take place altering the properties and character of the material to render it stable.

Of the many plastics on the market perhaps one of the best known is "Perspex," used almost exclusively in aircraft manufacture during the war, on account of its high light transmis-

sion and anti-shatter properties. When first introduced many of us seized on it as the answer to the architect's prayer—a transparent, or at least translucent, material to replace glass with the advantage that it could be used structurally. A careful analysis reveals, however, that while it has these advantages over common glass, it can only rarely be substituted for that material in building for the following reasons:

- (1) It falls within the category of thermoplastics and burns slowly.
- (2) It is not very resistant to scratching.
- (3) It requires special treatment to avoid the deposition of dust particles brought about by the static charges created when cleaning.
- (4) At present its cost is very much in excess of that of ordinary glass.

Of the few uses it appears to have in building, the most important are in the manufacture of lighting fittings, and in corrugated sheet form as roof lights in roofs where it will stand up to the most severe hailstorm and where a certain amount of scratching is not of material significance.

Apart from plastics in the form of paints, there are two other materials which are of use in building and are at present available in this country in limited supplies. One is of particular interest in that it is being manufactured in Johannesburg, from imported American materials. At present it is being processed into a form as a substitute for ceramic wall tiles, and, correctly handled, appears to have an assured future, particularly as it has been possible to produce and sell the article at a cost somewhat lower than the material it is being substituted for. In common with "Perspex" these plastic tiles have the disadvantage of being subject to scratching. The makers claim, however, that where this does occur it is easily removed by polishing. On the other hand, the tile is a high precision engineering job, accurate within two thousandths of an inch, and its advantages are summed up as follows:—

- (1) It has lightness combined with strength.
- (2) Its range of colours will eventually be infinite.
- (3) No sorting or sizing is required, thereby reducing site labour.
- (4) The special keying devices at the back of the tile assure an adhesion much greater than that obtained with a ceramic tile.
- (5) It is warm to the touch and is resistant to shock and extremes of heat and cold.

It has been pointed out to the manufacturers that in producing a 6in. x 6in. tile, they are unadvisedly adhering to a traditional size, and that if protection is to be afforded to a surface by the application of a novel impervious material, it is desirable that the number of joints therein be reduced to a minimum. The answer offered is that there are at present technical difficulties in the way of the production of a larger tile, but in any event the demand not only from the public but the architectural profession is for a 6in. square tile.

Various plastics in sheet form, designed for application to walls and other surfaces, were available before the war, and the majority of these were of American origin. At present the only make of this material which is available in the Union appears to be that of a British firm, and while my comments will be on their particular brand, it must be accepted that my remarks will apply to similar plastics generally. The sheets are supplied in one colour only at present, in thickness from one-sixteenth in. to three-eighths in. and in sizes up to 8 ft. x 4 ft. The selling price at present is 3s. for the thinnest board, per square foot, upwards. The material falls within the category of "thermosetting" plastics, and I enumerate some of its characteristics:

- (1) It will not warp or bend under extremes of temperature.
- (2) It is unaffected by water, spirits, oil or dilute acid, and is so completely resistant to burning that a naked flame cannot mark it.
- (3) While it is recommended that the material should be worked with power tools, the usual wood and metal cutting equipment can be used with good results.

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It appears, therefore, to be a suitable material for wall and even floor finishings, where a highly durable rigid finish is required, as in kitchens, bathrooms, laundries, etc. The initial cost may be high, but it must be remembered that no paint or other finish is required and maintenance costs are eliminated entirely. The sheets are sold in another form, which to my knowledge is one of the first attempts to grant plastics a structural application. Two sheets one-eighth-inch thick are separated by webs of similar thickness at two inch centres, making a hollow structural unit one inch thick, of light weight and high mechanical strength. In this form the board is suitable for all types of prefabrication, walling, doors, etc. The material can be supplied plain at 7s. 6d. per square foot, or with a genuine wood veneer both sides at 11s. 6d. per square foot, and while again the initial costs may appear high, the savings gained in finishing, floor space and maintenance must be taken into account. The weight is approximately 18lbs. per square foot as compared with brickwork at 120lbs., and when filled with an insulator such as vermiculite or glass wool, the insulation property is equivalent to a 14in. brick wall plastered

both sides. In use, the resonance resulting from the extremely hard impervious surface would have to be taken into account.

It is not possible to deal with the many other and varied forms in which plastics may eventually be of service to the Building Industry, and in passing I will only mention that in the field of paints and coatings, plastics have proved superior to natural products, and a large proportion of the total output has been absorbed in this field. Plastics have in addition been manufactured in pipe and other forms for use in plumbing and electrical installations, but as we have not yet had the advantage of close acquaintance with plastics in this form, I cannot make any comment other than that their flexibility must be a tremendous advantage over the materials such as steel, brass and copper in general use today.

VERMICULITE

While some of those present may be fully aware of the incidence, characteristics and uses of the mineral known as "Vermiculite," in view of the important part it is likely to play in the Building Industry they will excuse a repetition of the facts.

In its raw state "Vermiculite" ore is a derivative of Phlogopite, commonly known as Mica, which forms exceedingly thin flakes piled on one another to form sheets or "books" of several inches thickness. With the passage of time, water has penetrated between the flakes in minute quantities, and with the sudden application of heat, this water evaporates explosively as steam, forcing the laminations apart and creating an accordion-like structure up to 20 times larger than the original. The process is known as "bloating" or "exfoliating" and the resultant material has a specific gravity of 0.06, equivalent to a weight of only 4lbs. per cubic foot.

South Africa has one of the world's largest and richest deposits of "Vermiculite" where the ore lies practically on the surface with an overburden of a few feet only. Costs of mining and production are, therefore, low.

Several firms are mining, exfoliating and selling Vermiculite in its various forms. Unfortunately, as is often the case, those responsible did not in the first instance seek or obtain the right technical guidance, and attempted to market their product in forms which took no cognisance of the essential qualities of the material. In the case of Vermiculite its light weight, thermic and acoustic qualities as an insulator were entirely overlooked and it was put on the market in powder form mixed with various binding mediums as a floor and/or wall finish. The results, both from a scientific and practical point of view, were most unsatisfactory, and in the eyes of a majority of the building industry this potential material received a severe set-back. Used correctly, however, it can make a considerable

contribution to our problems, and I am outlining some of these uses briefly as follows:

- (1) In its loose form to provide acoustic and thermal insulation on ceilings, in cavities of walls, stud partitions and doors.
- (2) Mixed with cement to form precast slabs or blocks for partition and other walling.
- (3) Mixed with cement and cast in situ on concrete flat roofs and under floors.
- (4) Mixed with various media for application in situ to boilers, hot water and steam pipes.

I am of the opinion that one of the most satisfactory uses to which the material can be put is in the form of precast slabs as an improvement on the common stock brick non-structural internal lining or partition wall. One manufacturer is producing such slabs in sizes 18in. x 36in. and 3in. thick. Two such slabs replace a super yard of brickwork (48 Bricks) with a weight of 80lbs. thereby effecting a saving in the floor loading in excess of 250lbs. The cost per yard is in the neighbourhood of 8s., and the very considerable saving in labour as compared with brickwork, allows this type of wall to compete favourably in cost.

Due to lack of technical apparatus no comparative figures are available regarding the transmission of sound, but it is estimated that the 3in. vermiculite wall is equivalent in this respect to an 11in. cavity or 14in. solid brick wall. The coefficient of heat transfer of the slab is 0.6 B.Th.U./Deg. F./hr. per sq. foot, which approximates very closely to that of cork, and is a very considerable improvement over a 4½in. brick wall plastered both sides. The only apparent serious disadvantage in the slab is its compressive strength, which for a 1.5 cement mixture, is only 60lbs. For this reason its use must be confined to non-bearing walls.

* * * * *

Before passing on to other materials I must make reference to one special use of "Vermiculite" in which it is proving of considerable importance in the solution of our Non-European Housing Problem. A Johannesburg firm, who have undertaken a great deal of research in this field, are at present about to erect here in Natal, a number of houses with concrete walls, insulated internally with Vermiculite.

The procedure here is to place the asbestos shuttering used for the inside of the walls, on the ground ready to be raised into its final vertical position. Before this is done a "Vermiculite" cement mixture is cast on the shuttering to a thickness of 1½in. After 24 hours sufficient "set" has taken place to allow the shuttering to be raised and fixed in position ready for the casting of the outer concrete wall, which is only 3in. thick. By this method and at low cost a 4½in. thick sandwich wall is produced, which requires no plaster on either side, and provides the thermal insulation of an 11in. brick cavity wall.

EXFOLIATED SLATE

The other lightweight material to which I wish to make reference is "Exfoliated Slate" which is not yet in commercial production, and therefore, comparatively unknown, in this country. It has been known for a number of years that slate like certain shales in America, is capable of being "bloomed" or "exfoliated" under certain conditions, very much the same as "Vermiculite." It was not until recently that tests were made on deposits of certain slate in the Transvaal, the results of which were sufficient to warrant the erection of a pilot plant. The application of a certain patented process causes a reaction in slate, very similar to that in "Vermiculite," the essential differences being that it increases to a size about 5 or 6 times that of the original, and the resultant material is not of a laminated structure, but circular, very similar to aerated cement. The weight of the loose exfoliated slate varies from 20 to 37 lbs. per cu. ft., depending on the size of the particles. Its weight, therefore, is from five to ten times that of loose vermiculite, but its big advantage over that material is its very much higher compressive strength. Tests are still being conducted and it is yet too early to give exact figures. Preliminary reports indicate, however, that the compressive strength of blocks in which a mixture of cement, coarse and fine exfoliated slate were used is, at 7 days, in the neighbourhood of 300 lbs. per sq. in. in the case of the weaker mixes and up to 900 lbs. at 7 days in the stronger. These figures must be compared with that of ordinary concrete where compressive strengths are obtained varying from 2,000—3,000lbs. per sq. in. at a weight of approximately 140 lbs. per cu. ft., as against 70 lbs. per cu. ft. of the exfoliated slate block.

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It would appear then that this newly developed material has uses similar to those outlined for Vermiculite, except where weight is a major factor.

In addition, the aggregate can be used in concrete walls and slabs not required to carry normal heavy loads, and can be used in the form of precast blocks to replace brick in normal structural walls. No figures of heat insulation or acoustic characteristics are yet available, but it is obvious that while they may not be quite as good as vermiculite they must be considerably higher than that of brick in common use today. The raw material used in the production of the exfoliated slate is derived from the vast accumulation of waste at the existing quarries, so that the initial costs of production are negligible, and by volume the blocks must compete favourably in cost with ordinary bricks.

ALUMINIUM AND ITS ALLOYS

In the search for permanency and low maintenance costs, we find the trend is to look beyond the traditional materials such as timber and brick, and where the answer is not to be found in plastics, metals of all types are providing the solution.

Of the metals, aluminium alloys appear to hold out the greatest prospects.

That it has not been in more general use in the past, is due to the fact that the metal was difficult to extract from the ore. Its properties are such, however, that it became an indispensable material in war production, and technical processes of extraction from the ore advanced to such a degree that production is now at least six times as great as in 1935, and in 1946 the cost of aluminium in Britain had been reduced from the war-time figure of £110 to £85 per ton.

The metal, and its alloys, are clean looking, do not rust, warp or splinter in use. They make an infinite variety of attractive and permanent finishes, and may be anodised in natural or coloured shades from jet black to delicate pastel tints. Some of the other characteristics of this metal are its high resistance to corrosion, its low density (2.65 compared with 7.8 for steel) and easy workability. The alloys are, however, highly electro-negative towards most other metals, so that they will corrode if placed in contact with steel, copper, etc. For this reason, if used in conjunction with other metals, adequate precautions must be taken to insulate the one from the other.

Overseas, where prefabrication has been accepted as a basis of construction, aluminium has played a major part in that its properties have allowed the manufacture and transportation of large units at low costs. To my knowledge the only major use made of the material in this country so far, has

been in the form of corrugated roofing sheets supplied at 1s. 10d. per lineal foot as against the 7d. of corrugated galvanised iron. The present local and world shortage of steel, which is likely to continue for some years, indicate that if we are to continue with our building programme, far greater use must be made of aluminium, and in the coastal areas, where the corrosion of steel is a major problem, this introduction must be of a permanent nature.

Its tensile strength is not sufficiently high to allow of its substitution for steel reinforcement in concrete, but for windows and their sub-frames, doors and door frames, roof coverings and gutters, kitchen and bathroom equipment it can replace steel. This can only be done at a higher initial cost, but here again no finish is required after fabrication, and maintenance costs are reduced to a negligible minimum.

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In the use of these new materials, and many others which I have not had time to mention, a problem arises which cannot be overlooked. This is the training of apprentices, or the retraining of artisans already qualified in the orthodox building trades, to know, understand and use them. Our profession cannot and must not overlook the contribution which we can make in this direction. The Building Industry is on the threshold of important technical changes. It is up to us and our associates in building to lubricate these changes.

DISCUSSION

MR. FINKELSTEIN said he had listened with very great interest to Mr. Cowin's excellent paper. While appreciating the time factor, he nevertheless felt that in a discussion on this very important subject there was one material that should be mentioned, which would play an increasingly important part in the future. The material he had in mind was one of the derivatives of timber: plywood. Mr. Cowin had referred to plastics which, in the years before the war, were regarded as one of the most promising of new materials; but up to the moment that promise had in many respects not been fulfilled.

During the war years, however, plywood played such an important part in the materials that were available for the development of different aspects of warfare, that its development had now become thoroughly established and it would be come increasingly important as time went on. One of the items, for example, during the war which was generally conceded to be the most important perhaps of all inventions in this field was the development of the Mosquito bomber, the basis of which was the use of plywood. It was particularly important in that the material of which it was formed was a natural product available in vast quantities in many countries.

Mr. CONNELL said he would like to comment on one point of detail. Where aluminium was used in coastal areas, where

it was subject to contact with salt-laden air, it would corrode. He felt it would be just as well for members to bear that in mind.

MR. FAIR said the use of vermiculite was of interest to some architects who had tried it in housing schemes. In one case the results were very unfavourable; in another case, successful. The successful result was where a particular mix had been used which had not been disclosed. He asked if Mr. McIntosh could tell them something of the use of vermiculite as a wall-finish, where it had caused a considerable amount of trouble. He thought they could be warned of that.

MR. MCINTOSH said the case referred to by Mr. Fair concerned a young architect who had used vermiculite as a wall-finish in kitchens and bathrooms. This material, as a finish, was rather fine, hard, could stand knocks, and yet had something resilient about it. As something had gone wrong, he had been called in by the architect. When he got to this particular house he found rather a sorry state of affairs. Where the vermiculite had been plastered on to the wall between the corners of a room, the expansion was so severe that it actually sheered the wall some nine inches thick. In addition they found that on the walls which had vermiculite on the one side and plaster on the other the pulling and lifting did not



DURBAN CITY CENTRE

Photo: South African Railways

appear inside, but on the outside it was lifting the wall anything up to one-eighth of an inch. Further, there was a difficulty on door jambs — luckily in that particular case it had merely bulged off in big sheets anything up to six feet high. This was the first time these younger architects had used this material. They had been persuaded to use it, and this was the result. It practically meant the rebuilding of quite a large section of the house.

THE PRESIDENT-IN-CHIEF, replying to the discussion, said Mr. Finkelstein had correctly drawn attention to the introduction of plywood in various forms. He was not quite certain, but he felt that, in the processing of that plywood, it was not the ordinary plywood as known; he was of the opinion that certain casein glues were used. So that the ordinary plywood by itself would necessarily require some further treatment, in the form of plastic.

In regard to plastics, it must be borne in mind that the raw materials involved were timber and its derivative, cellulose, and also coal. In South Africa we were fortunate in having very large supplies of coal and it was possible, with technological research, that great developments in the manufacturing field would follow. On the other hand, the timber resources of the world were being reduced very considerably; he therefore did not think we could anticipate any considerable exten-

sion of the application of derivatives of timber in the field of plastics.

In regard to the case quoted by Mr. Fair and Mr. McIntosh he had in his paper referred to the misapplied use of vermiculite. From what had been stated he felt that the vermiculite had nothing whatsoever to do with the conditions described. It had been wrongly used, in a powder form, and it was the binding media that caused the troubles mentioned.

He was not quite sure what Mr. Connell's reference to the tendency of aluminium to corrode meant, or what the facts were. But what was of great importance was that they now had available a Building Research Institute, so that when new materials were produced, before architects asked clients to try them out, they now had the opportunity of consulting Mr. Connell's Department. They were indeed grateful, as a profession, that the Building Research Institute had been constituted. ("Hear, hear.")

Mr. COMMINS said he wished, on behalf of the Congress, to record its thanks to the President-in-Chief for a very knowledgeable paper, which they had all thoroughly enjoyed and profited by. (Applause.)

A REPORT ON THE TOUR OF INSPECTION OF THE SCHOOLS OF ARCHITECTURE AND QUANTITY SURVEYING IN SOUTH AFRICA

By D. S. HADDON, A.R.I.B.A., M.I.A., Chairman of the Board of Education

THE PRESIDENT-IN-CHIEF: In view of the paper read by Mr. Haddon yesterday at the Public Session, he will now give you a broad outline of the observations of the Inspecting Committee, which went round the country.

* * * * *

This will be a verbal report, on behalf of the Board of Education, on an inspection of all the Schools of Architecture and Quantity Surveying in South Africa, which took place in September of last year. The inspection was concerned mainly with two things: firstly, with the fulfilment of the minimum requirements for registration under the Act; secondly to compare the Pretoria University School of Architecture with the Witwatersrand and Cape Town Schools, for the purpose of deciding on Pretoria's application for recognition by the R.I.B.A.

It is true that we promised the schools themselves that we would, as the Inspection Committee, probably give them a private report, if we thought it was necessary, on any small part of their training facilities. Our main Report, I estimate, will take another two months to complete. In the meantime an Interim Report has been handed to the Board of Education, and passed on by the Board of Education to the Central Council.

That Interim Report dealt with some important aspects of the first point—the minimum qualification for registration under the Act; and it contained four recommendations, which I have no doubt will be published in due course. Of those four recommendations three have already been put in hand by the Schools concerned, and the fourth is probably well on its way to settlement.

The other remarks I have to make are that the Committee will not in any way attempt to compare the purely University qualifications. It is not a function of the Board of Education to decide whether the Course in Architecture offered by any School is worth a Degree, or whether that Degree is better than the Degree in another School, or the relative merits of Diplomas and Degrees. That is not a function of the Board of Education, and that will not in any way be attempted.

But one thing that will be attempted, and it causes serious concern, is how to settle the vexed question of conducting what is known as the "Certificate" Course in Architecture in towns outside of University centres

Another important point, and one of particular interest to you, is that there are approximately 700 students in both Professions in the Union. That large number of students is entirely due to the six years' time lag during the war. As an

Institute, we are grateful to the Universities for the fact that they took every ex-soldier before they considered any civilian students.

Generally, I may say that the report will not be seriously critical of the Schools except in some aspects which we think do require improvement, the most important of which is the question of practical experience before registration. That, strictly speaking, has nothing to do with the Schools.

On that point, one final word. I think I can say that the Profession itself, and members of the Profession themselves, will not be let off lightly by the Committee on the same subject. It is not merely the students who are at fault in acquiring practical experience, but to a very great extent both Professions seem to have adapted the attitude, "We have got Schools of Architecture now; we don't have to do so much for the student as we used to do in the old days of the pupillage system." Well, if there are any complaints about the lack of practical experience among trained, newly qualified students, the Profession should seriously think whose fault that is—the University's or theirs. The issue will be made clear in the main Report.

There are, of course, other items which will be dealt with: briefly, the question of the inadequacy of accommodation at some of the schools; the question of the staff's remuneration; the question of the relationship between the staff and their right to indulge in private practice, in order to keep themselves up to date. Those points will be dealt with by the Committee.

Well, that is a brief review. If anybody wants to ask a specific question, I will try and answer it; but pending the completion of the Report, I cannot report any further at this stage.

* * * * *

THE PRESIDENT-IN-CHIEF: Is there anybody who has any points to raise with Mr. Haddon on this particular aspect? If not, I must again refer to the valuable work which the Board of Education has done, and particularly the Inspecting Committee. It devoted a very considerable amount of time, both during its tour of the Union and subsequently in preparing the Report, which is not yet complete, on what is, to the Profession, a most important matter; and the members of that committee deserve our grateful thanks (Applause.)

MR. PERCICK asked if the Report would be published.

MR. HADDON replied that that was a matter for the Central Council to decide after it received the Report.

ADDRESSES TO CONGRESS BY STUDENT REPRESENTATIVES

THE PRESIDENT-IN-CHIEF: I propose now to depart somewhat from the printed agenda by introducing to you the Student Representatives who are attending Congress. Unfortunately we have not yet found ways and means of associating them officially with the Institute, but I feel we must go into that matter again. We have with us representatives of the Students' Architectural Society of the Witwatersrand, of the Pretoria Boukundige Studenten Vereeniging, and of the Architectural and Quantity Surveying students of the Natal University College, who have not as yet incorporated themselves into a Society. I now have pleasure in asking them briefly to address you. Firstly I will call upon Mrs. Sheridan, representing the Students' Architectural Society of the Witwatersrand. As President-in-Chief, although I am a member of the Transvaal Provincial Institute, I would like to take this opportunity to pay a tribute to the Transvaal Provincial Institute, which provided the funds to allow these student representatives to attend our Congress. ('Hear, hear.')

Mrs. M. Sheridan (Chairman, Students' Architectural Society), University of the Witwatersrand, Johannesburg:

I am indeed sincerely grateful for this opportunity of paying my respects to this Congress. I am fully aware of the grave responsibility of representing here the architectural students of the University of the Witwatersrand, a responsibility lessened in no way by the fact that the standard of maturity of the students of our school is noticeably higher than it has been in the recent past. A large proportion of them are ex servicemen whose maturing influence in the school is becoming increasingly apparent.

I want to say with assurance that the students are very much awake to the fact that the profession they have chosen brings with it a necessity for public service in as large a measure as does the medical profession. And even now, in their student days, they show every eagerness to prepare themselves for this responsibility, and to throw themselves into the task as soon as possible.

For this reason then, I consider my attendance at this Congress as a very great privilege in view of the fact that it has afforded me the opportunity of hearing you bring to light the great problems which confront the profession in South Africa, whether of sociological, economic, or aesthetic nature. And it is particularly gratifying to realise that the profession as an organised body is aware of these problems, and is making sincere attempts to grapple with them.

I feel myself very fortunate in being the Chairman of a society which has such a fine record of collaboration with the

Transvaal Provincial Institute, and I want to make use of this occasion to express first our appreciation to the Institute of their interest; and secondly to assure the Institute of our sincere desire to work in the closest collaboration with it.

We realise with regret that the Act does not provide for the students being embodied in the profession, but the liaison that has been achieved has replaced this deficiency to some extent.

My Society endeavours to achieve three objectives, and in doing so, is consciously following a definite stated policy. The first facet of this policy deals with supplementing the normal education of the student by a regular series of papers and discussions dealing directly or indirectly with the courses in which he is required to qualify at the University. Lectures are arranged on subjects dealing with architecture, painting, sculpture, and their derivations such as Industrial Design, Theatre Design, etc.—subjects which could not be dealt with within the confines of the curriculum. Mr. Haddon made the point yesterday that the Architect should be, among a good many other things, a man of culture. Our Society attempts to give the student what opportunity we can of augmenting that side of his development. In this connection I must tell you of an incident which occurred at a general meeting at the beginning of this year. The Chairman, after outlining the policy and programme of the Society for the year, mentioned that the subscription of 2/6 was due for payment. Remark overheard on the floor: "You pays your half crown and you gets your culture."

The second objective of our policy concerns the lighter side, the entertainment side, of student life, but it carries with it a very serious purpose. We attempt to establish and encourage by means of social functions of varied nature, a group spirit and a feeling of unity among architectural students, in the sincere hope that such a spirit will continue to exist among them when they have entered the body of the profession. I feel that such a spirit might be the first step in achieving the same strength through unity which has been achieved in a body such as the Medical Profession.

I come now to our third objective, which is the point on which we meet in collaboration with the Institute. We appreciate the need for improving the public relations of the Institute. We also realise that it is extremely difficult, if not impossible, for the Institute to put into effect such an objective. The Students' Society, on the other hand, is able, and eager, to work towards the education of the public in architectural matters. We have embarked on a policy of holding an annual exhibition for this purpose of public education, and in the past few years have covered subjects under such headings as "Town Planning," "Rebuilding South

Africa," and "Architecture in South Africa." It was in these projects in particular, that we have enjoyed the staunch support of the Transvaal Provincial Institute both morally and financially.

In conclusion, Mr. President-in-Chief, but by no means because it has only now occurred to me, I want to express my very sincere gratitude to the Transvaal Provincial Institute for having made it possible for myself and my colleague from Pretoria to be present at this Congress. It is a gesture greatly appreciated by the students, and by me in particular. Thank you.

THE PRESIDENT-IN-CHIEF: I will next call upon Mr. Chiazari, who represents the Architectural and Quantity Surveying Students of the Natal University College.

Mr. Chiazari, Natal University College, Durban:

I should like to thank you all for the opportunity offered to us to attend your Congress. The papers we have listened to have been very instructive. I can only say that I have learned a lot. It is very comforting to us as students to see the interest that you have shown in our education. I hope that one day, when we too take our place with you, we will have future students' welfare equally at heart. (Hear, hear.)

I should also like to take this opportunity of welcoming the representatives of Witwatersrand and Pretoria students here. I hope that they will enjoy their stay and profit by what they hear and see in Natal. Thank you.

THE PRESIDENT-IN-CHIEF: Thank you, Mr. Chiazari. I now call upon Mr. Maartens, of the Pretoria Boukundige Studente Vereeniging, which I understand represents both Architectural and Quantity Surveying students in Pretoria.

Mr. W. Maartens, University of Pretoria:

As a delegate to this Congress from the University of Pretoria, I value this opportunity afforded me of saying something this afternoon.

Let me start by thanking the Transvaal Provincial Institute for their financial assistance extended to the two Schools of Architecture in their Province. We are very grateful to be here and I assure you that we will have a lot to tell when we get back home. It is gratifying to note the interest taken in the students by the Institute, and at this stage I would like to mention that we, the students, look forward to some association with the Institute in the near future.

Last year in Cape Town the students of Architecture in this country held a Congress with the object of affiliation with the Institute of Architects. However, some technical difficulties arose and this never materialised. The advice of Mr. Lightfoot was sought at that time and it seemed that this would only be possible if the Institute delegated an executive member to attend our Students' Congress and for which we would certainly ask, if we had another meeting of this nature. If this matter happened to be on the agenda of some meeting or other this week I can assure you, Mr. President-in-Chief—and I am sure I speak on behalf of all the students in this country—that you will have our full support regarding this very important matter.

Mr. Connell, who knows the capabilities of the S.A. Students only too well, suggested yesterday that some of your problems can be solved by us. I can assure you that this is possible—not only possible, but definitely so—and that we would be glad to help you. This calls, I think, for a closer co-operation between the students of this country and the Institute of S.A. Architects.

I feel honoured to be a delegate of a University to this Congress, and lastly I would like to thank again the body concerned for their financial assistance and the Institute as such for having us here. I do not wish to detain you any longer, Mr. President-in-Chief, Ladies and Gentlemen, but I would like to emphasize again that we, the students, of this country, look forward to some affiliation with the Institute in the very near future. Thank you.

THE PRESIDENT-IN-CHIEF: Thank you, Mr. Maartens. We have listened with interest to what our student representatives have had to say. I can tell Mr. Maartens that it is our sincere wish that some means be found of incorporating students within the Institute and the Chapter. Within the conditions of our Act I am afraid there is no immediate means of incorporating them, but we will have to find other methods.

THE PRESIDENT-IN-CHIEF: I now have pleasure in calling upon Mr. Andrews, President of the Cape Provincial Institute, to read his paper. We know he has given a great deal of thought to this matter. I think I can say his paper will raise some comment from Mr. Haddon, if from nobody else.



Photo: South African Railways

DURBAN'S "LAGOON" HARBOUR WITH AN AREA OF SEVEN SQUARE MILES

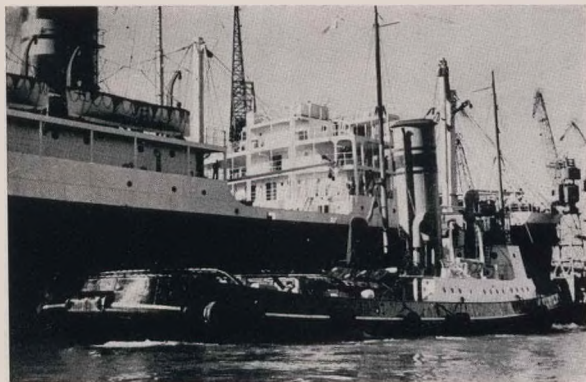


Photo: Duncan Howie

ONE OF THE ENTERTAINMENTS PROVIDED WAS A TRIP ROUND THE BAY

THE ARCHITECT IN RELATION TO THE STANDARD FORM OF BUILDING CONTRACT

By E. DOUGLAS ANDREWS, A.R.I.B.A., M.I.A., President of the Cape Provincial Institute

With your permission I am going to undertake one aspect only of the subject which has been thrust upon me by my friends, John Fassler and the Registrar. To attempt an analysis of the whole of the standard contract form would take at least four times the time you have placed at my disposal. I will discuss the rights and duties of the sub-contractor in the building framework, examining the relevant clauses in the standard contract form, and if it be felt that by so doing I am not fulfilling the obligations that have been laid upon me, my defence is the telegram I received from Mr. Lewis. It read: "Arrange your own paper—Regards, Lewis."

* * * * *

A building contractor, under the necessity of carrying out certain duties in terms of his contract with the building owner, commonly enters into a sub-contract with a third party, wherein the latter undertakes to perform some portion of these duties. This practice is as old as the building industry, and as the third party or sub-contractor is usually a specialist in the work he undertakes, the arrangement has obvious advantages. The building contractor is relieved of certain duties which he may be imperfectly equipped to undertake. The building owner need deal with one person, the building contractor, only, thus avoiding a multiplicity of contracts and liabilities.

We see, in these circumstances that there is the main contract between the building owner and the building contractor and the secondary (or sub-contract) between the building contractor and the specialist sub-contractor. The two contracts are separate and the terms of the one may or may not correspond with the terms of the other.

In the absence of a contrary stipulation, the building contractor can sub-contract the work he has undertaken, but clearly he is liable to the building owner for the negligence of his sub-contractor. An exception to this principle is made in certain types of work which are obviously given to the contractor to be personally performed by him. Thus a contract given to an artist to paint murals in a building could not be subcontracted by him.

As will be seen, there is no legal bond between the building owner and the sub-contractor, no privity of contract between these two. If the building contractor does not pay him, the sub-contractor cannot sue the building owner and conversely, the owner cannot sue the sub-contractor should the latter delay the job, or should his work prove to be defective. It is important that the architect and quantity surveyor should

at all times be aware of this absence of contractual relationship between the building owner and the sub-contractor.

This position may be entirely altered and a legal bond be created between these two. This may be done (a) expressly, for example where the owner guarantees the sub-contractor's account or (b) tacitly, for example where the building owner pays the amount of the sub-contractor's account direct to him. As I have said, the architect and quantity surveyor must be very conscious of the relationship in which the building owner stands to the sub-contractor or they may lead the building owner into a position where a link has been created between him and the sub-contractor.

It is often that architects send detail drawings and give instructions direct to the sub-contractor—obviously an undesirable practice. Hudson—the standard English authority on the law of building contractors—refers to such procedure as "unbusinesslike" suggesting that such action, however, would not be sufficient to create a contract between the owner and the sub-contractor. He continues further: "In cases, however, where there is a doubt as to whether the specialist has been employed by the contractor or by the building owner, dealings between the building owner or his architect and the specialist inconsistent with the relationship between the contractor and the building owner or his architect under the main contract, might be some evidence that the building owner was employing the specialist direct, or that the contractor had acted as a mere agent of the building owner in employing the specialist."

When the sub-contractor is asked to tender it is usually the architect who invites the tenders and the tenders are addressed to him or to the building owner. Now it is obvious that a tender addressed to a person is an offer to supply him with the goods at the price stated. Now, if this person wishes to substitute some other party's name (e.g., the building contractor's) as the one to accept the offer, then it must be realised that the builder's letter, though on the face of it may read as an acceptance of the tender, is really in effect a counter offer, and the tenderer can quite obviously decline to accept the new condition imposed.

The sub-contractor looks to the building contractor for payment of his account, just as the building contractor in turn looks to the building owner. If the latter fails to pay the building contractor then the builder can, in South Africa, exercise a right of retention or lien on the building. This is a very real security for the payment of the debt.

Turning now to the sub-contractor, what is his position? He can exercise a lien on any unfixed materials on which he has expended time and labour. For example an electrical sub-contractor can exercise a lien on electrical equipment and switch gear being assembled in his workshop even if certain of the parts had been supplied to him by either the building contractor or by the building owner. Regarding the work that has been built into or affixed to the building, the sub-contractor's security is rather weak. It was laid down by Sir Henry de Villiers in an old Cape case that the sub-contractor has no right of retention, and subsequent legal decisions have followed this case. There is, however, some slight ground for the contention that the sub-contractor could exercise a lien, if the work he has done has been necessary for the salvage of the building. As, in addition, the sub-contractor must have had occupation of that over which he proposes to exercise lien, I think it will be obvious that, in practice, it may be taken that the sub-contractor's rights are not able to be secured in this way.

* * * * *

I have spent a considerable time in setting out the common law rights of the sub-contractor, the building contractor and the building owner. Let us now turn to the standard contract form to see what modifications this imposes on these rights and duties:

Clause 14:

"The Contractor shall not without the written consent of the Architect assign this contract or sub-let any portion of the works, provided that such consent shall not be unreasonably withheld to the prejudice of the Contractor."

Assign means to substitute some other builder for himself, the building owner then dealing with the substituted person and looking to him for the performance of the contract. Without the permission of the building owner the contractor cannot thus entirely free himself from responsibility for the obligations he has undertaken. He may, however, under normal circumstances, sub-let the work, or any portion thereof, providing he remains responsible for the proper performance of the contract to the building owner. This right is here taken away from the builder in this clause, making the sub-letting or sub-contracting contingent upon the employer's permission expressed through the Architect. This legislates for sub-contractors selected by the building contractor.

* * * * *

The next clause, Clause 15, is headed: "Sub-contractors," but it would be better called "Nominated Sub-contractors," and this term nominated sub-contractors introduces a new conception.

The specialists who are to supply or execute a particular kind of work, for example, steelwork, electrical work or sanitary fittings are to be nominated by the building owner and

are to be accepted as sub-contractors by the building contractor. This has certain obvious advantages from the building owner's point of view and from the building contractor's too. The latter are on occasion heard to complain that the appointment of nominated sub-contractors detracts from the authority of the building contractor. It is suggested that the authority of the building contractor is well protected by the Provisions of Clause 15, the terms of which we are about to discuss, and which are, in my experience, but rarely insisted on by the builder. In view of the rapid increase in the number of pre-cast and pre-fabricated items to be embodied in the building structure, it would seem that the number of nominated sub-contractors will tend to increase rather than diminish.

The nominated sub-contractor may be named in the specification at the building owner's request, and the item being fully specified the building contractor may be asked to make his own arrangements regarding price. This is unusual, as we all know, ordinarily a provisional sum or P.C. item is specified to cover the cost of such article or work. I have been in the habit of applying the term P.C. item to articles brought ready made to the site and provisional sum to an item where labour mainly is required. Hudson suggests that P.C. applies to small items and provisional sums to large. It is a pity that two different terms should be used to express the same meaning; it would be simpler if the term P.C. item could be abolished; tradition, however, clings to it, and the abbreviation P.S. for provisional sum might smack too much of a last-minute insertion of a clause into the specification of Bill of Quantities—a practice unheard of in either of the professions.

Clause 15 (a) reads as follows:

"All Specialists and others executing any work or supplying and fixing any goods for which provisional sums are included in the Specification who may be nominated or selected by the Architect are hereby declared to be Sub-Contractors employed by the Contractor and are herein referred to as "nominated Sub-contractors."

In this the Building contractor agrees to accept responsibility for the work of these "nominated sub-contractors." It is clear that this must be provisional upon some safeguards of his rights and interests, and this is done in the second paragraph of the clause.

In passing, it must be appreciated that Clause 15 (a) must not be read as conferring the power of nominating on the architect from the building owner's point of view, it is merely informing the builder that he must accept the Architect's instructions in this regard. Whether the architect has or has not authority to select a particular sub-contractor will naturally depend upon his agreement with the building owner.

* * * * *

To return to the contract form and the clauses which are intended to safeguard the interests of the building contractor:

"No nominated Sub-contractor shall be employed upon or in connection with the works against whom the Contractor

shall make reasonable objection or (save where the Architect and Contractor shall otherwise agree) who will not enter into a Sub-Contract providing:

- (1) That the nominated Sub-Contractor shall indemnify the Contractor against claims in respect of any negligence by the Sub-Contractor his servants or agents or any misuse by him or them of any scaffolding or other plant the property of the Contractor or any Workmen's Compensation Act in force.
- (2) That the nominated Sub-Contractor shall indemnify the Contractor against claims in respect of any negligence by the Sub-Contractor his servants or agents or any misuse by him or them of any scaffolding or other plant the property of the Contractor or any Workmen's Compensation Act in force.
- (3) That payment less only cash discount of 5 per cent. shall be made to the nominated Sub-Contractor by the Contractor within seven days of his receipt of the Architect's Certificate under clause 25 hereof which includes the value of such Sub-Contractor's work."

This clause gives the building contractor the right to make reasonable objection to the sub-contractor who has been nominated and gives him also the right to insist that the sub-contractor enters into a sub-contract giving the builder indemnification in certain respects and also the right to a cash discount of 5 per cent. in return for the duty to pay the sub-contractor within a stated time.

The Architect has to issue certificates of payment and to include therein the amounts to be paid by the builder to the sub-contractor after the owner has honoured the certificate.

Now, to assist in some way to secure the sub-contractor's rights, **Clause 15 (b)** was introduced:

"Before any such certificate is issued to the Contractor he shall if requested by the Architect furnish to him reasonable proof that all nominated Sub-Contractors' accounts included in previous certificates have been duly discharged in default whereof the Employer may pay the same upon a certificate of the Architect and deduct the amount thereof from any sums due to the Contractor. The exercise of this power shall not create privity of contract as between Employer and Sub-Contractor."

This clause requires some consideration. It seems to offer first the suggestion that the contractor is to be regarded as a channel through which payment will flow from the employer to the sub-contractor. This conception is, however, attacked by the last sentence clearly asserting that there is no contractual link between the employer and sub-contractor.

Clause 15 (c), which follows, has the same purpose of assisting the nominated sub-contractor:

"Should the Architect desire to secure final payment to any nominated sub-contractor before final payment is due to the Contractor and the Sub-Contractor has satisfactorily indemnified the Contractor against any latent defects then the Architect may in a certificate under Clause

25 hereof include an amount to cover the said final payment and upon payment thereof to the sub-contractor the Contractor shall be discharged from all liability for the work or materials covered thereby save for such latent defects aforesaid and he shall pay to the Sub-contractor the amount (subject to Clause 25 hereof) so certified whereupon the limit of retention money named in Clause 25 hereof shall be reduced by such certified amount."

There is a certain vagueness of wording here. "The sub-contractor has satisfactorily indemnified the Contractor against latent defects." This must presumably be read as "to the satisfaction of the contractor"—which means that the operation of the clause can be thwarted by the latter. The last phrase "whereupon the limit of retention money named in Clause 25 hereof shall be reduced by such certified amount," is also badly worded. What is intended is that "the amount from which the retention fund named in Clause 25 is calculated shall be reduced by such certified amount," which is rather a different procedure.

In examining Clauses 15 (b) and 15 (c) we must take notice of **Clause 24 (b)** of the contract form:

"The provisional sums mentioned in the Specification for materials to be supplied or for work to be performed by nominated Sub-contractors or for other work or fittings to the works shall be paid and expended at such times and in such amounts in favour of such persons as the Architect shall direct and sums so expended shall be payable by the Contractor without discount or deduction except the appropriate cash discount as herein before mentioned or (without prejudice to any rights of the Contractor under the Contract referred to in Clause 15 hereof) by the Employer to the said Sub-contractors or Suppliers. The value of works which are executed by the Contractor in respect of provisional sums or in additional works shall be ascertained as provided in Clause 10 hereof. At the settlement of the accounts the amount paid by the Contractor to the said Sub-contractors or Suppliers (including a cash discount of 5 per cent.) and the said value of such works executed by the Contractor shall be set against such provisional sums or any sum provided for additional works and the balance after allowing pro-rata for the Contractor's profits at the rates contained in the Contractor's estimate vide Clause 2 hereof shall be added to or deducted from the Contract sum; provided that no deductions shall be made by or on behalf of the Employer in respect of any damages paid or allowed by any Sub-contractor to the Contractor the intention being that the Contractor and not the Employer shall have the benefit of any such damages."

This clause suggests that direct payment by the Employer to the Sub-contractor may be made at any time and not only after the default of the Contractor. In examining the point, Mr. Acting Justice Thompson suggested on the Cape bench recently that the dubiety should be resolved by applying the

limiting condition to clause 24 (b) as well. It is, however, unfortunate that the dubiety exists.

Now let us examine the position from the sub-contractor's point of view. Assuming the employer and the architect have followed the procedure indicated in the contract form the sub-contractor has no privity of contract with the employer. This is clearly stated in clause 15 (b). The sub-contractor's position is a curious one—he cannot maintain a right to a certificate from the architect and subsequent direct payment by the employer, if the builder has defaulted. The clause clearly says that the employer "may pay the same upon a certificate of the architect." On the other hand the right of the employer to make direct payments to the sub-contractor is not a cession of rights by the building contractor which he can revoke at will. The sub-contractor is not entitled to sue, his right is restricted to the receipt of payment. He can merely hope that the employer will exercise his right to make payment to him direct. So now as clause 15 stands the employer must first make payment of the sub-contractor's money to the building contractor. In the event of the contractor not paying the sub-contractor, the employer has the right, which he may or may not choose to exercise, of deducting the amount from the builder's next certificate and then paying it direct to the sub-contractor.

Two problems arise. (a) There is no right given to the employer to continue to make direct payments in the event of the building contractor once defaulting — it would seem that the contractor must in each case, first be given the money and each default be treated independently. And (b): What if there is no further certificate or if the amount of the future certificate or certificates is insufficient to cover the amount of the sub-contractor's account? It is conceded that these are unusual cases, but they may arise.

Now if the employer should decide to exercise his right in terms of clauses 15 (b) and (c), it will be appreciated that his action prefers the claim of one group of creditors of the building contractor before that of other concurrent creditors with whom are included the ordinary or un-nominated sub-contractors. Suppose the building contractor becomes insolvent. We will realise that such preference would be a real benefit to the nominated sub-contractor. The question arose whether the Courts would permit such preference. In England in 1905 in the case of *re Wilson, ex parte Fowler* (1905 2K. B. 713) it was decided that such a procedure may be put into operation notwithstanding the bankruptcy of the builder.

That this rule would also be followed in S.A. was the view expressed in the recent Cape case, *Norman Kennedy vs. Norman Kennedy, Ltd.*, by Ogilvie Thompson, A.J., in his judgment in March last: "In my judgment liquidation would not defeat the Building Owner's right to make direct payment."

There is, however, in South Africa an arrangement peculiar to this country, namely that known as judicial management. The Court appoints judicial managers to take over

control of the affairs of a company finding itself in difficulties, with the intention of nursing it back to financial stability and thus to safeguard the interests of the shareholders. The claims of all creditors prior to the taking over by the judicial managers are stayed in order to assist them to achieve their purpose.

Now, in the Kennedy case, the judicial managers sought an order from the Court to restrain the building owners, who, prior to the date of the commencement of the judicial management (8 Jan., 1947), had entered into building contracts with the company—

- (a) from making any payments to any nominated sub-contractors as defined in the said contracts in respect of work done for or materials supplied to the Company prior to the said date;
- (b) from deducting any of the said claims of Sub-contractors from any payments due to the company in terms of architects' certificates; and
- (c) authorising the Judicial Managers to rank the said claims of Sub-contractors on the same basis as other creditors of the company existing on the 8th January, 1947.

This rule was opposed by certain of the nominated sub-contractors but not by any of the building owners. The Court decided to grant the order sought by the judicial managers.

One point should be noticed—no building owner opposed the rule—but as they had already the benefit of the work there was no good reason why they should. A.J. Thompson on this point did say: "Possibly the Court might not be disposed to confirm the rule in the face of opposition from the Building Owners."

* * * * *

The judgment in the Kennedy case has been applied in the subsequent case of *D. W. Reid vs. Reid and Knuckey (Cape) (Pty.) Ltd.*, an exactly similar application. It will be realised that if the judicial management is followed by bankruptcy of the builder and the building owners have during the period of judicial management been forced to pay the nominated sub-contractor's monies to the building contractor, then the hope of the sub-contractor of receiving preferential treatment in the case of bankruptcy is lost to him. As I have said, the Cape Court found that the building owner's right to make direct payment to nominated sub-contractors can be maintained in the case of the builder's bankruptcy, but it is obvious also that if he avails himself of this right under these conditions he will be paying the same amount twice. This point was put to the Court by Counsel, but was not dealt with in the judgment.

The decisions in the cases just mentioned have had very serious repercussions in the building trade in the Cape. The sub-contractors are dissatisfied and seek some security for their claim. The result has been all types of conditional endorsements of sub-contractors' tenders. The problem was then placed before the Cape Town Joint Practice Committee

of the Building Trade by representatives of the sub-contractor members of the M.B.A.

The Quantity Surveyors not being often asked to deal with sub-contractors' tenders seemed to me to take the view that it was not a matter which could vitally concern either professional body. It was a shock to some to learn that in view of the Cape practice of including the quantity surveyors' fees in the contractor's certificate, the quantity surveyors' position might in some circumstances be no better than that of an unrecognised sub-contractor! The joint practice committee, being sympathetic, decided to examine ways of assisting the sub-contractor. How can this be done?

I suggest there are:

(a) A guarantee of payment by the building owner of the account of the nominated sub-contractor. Probably the simplest way to do this would be to alter the word 'may' to 'shall' in the sentence in Clause 15 (b)—'the employer may pay the same upon a certificate of the Architect . . .'. In view of the likelihood of the building owner being forced to pay the amount twice this is not very satisfactory.

(b) The building owner to arrange separate contracts with the building contractor and nominated specialists. The account of the latter would then be paid direct by the building owner. As he would lose legal occupation of the building in the majority of cases the building contractor's lien would then be lost to him. The architect would, of necessity, have to undertake a considerable portion of the organisation of the work on the site, and responsibility, from the owner's point of view, would be divided among several contractors. An incidental is that the owner would claim the 5 per cent. cash discount clearly described as such in Clause 24 (a) of the Contract form.

This procedure also cannot be recommended.

(c) The building contractor to sign an irrevocable cession of his rights to the amounts due to nominated sub-contractors in favour of the nominated sub-contractors whose account would then be paid direct by the building owner. There is, however, more than a possibility that such a cession would be regarded as without benefit to the building contractor and consequently impeachable in the event of the builder's insolvency. The question of the cash discount would also arise.

(d) The building contractor may be required to provide sureties satisfactory to the nominated sub-contractor for payment of the latter's account.

It is felt that the last mentioned procedure would prove least cumbersome and would not interfere with the proven inter-relationship that exists in the building trade.

* * * * *

Before we leave the standard contract form there is one further clause which bears on the sub-contractor. Dealing with the position arising on the contractor's default or insolvency **Clause 22 (b) (2) reads:**

"The contractor shall, if so required by the employer or architect, assign to the Employer without further payment the benefit of any contract for the supply of materials and or works intended for use under this Contract or for the execution of any works and the Employer shall pay the agreed price (if unpaid) for such materials or works supplied or executed after the said determination."

Now this clearly has no force or effect unless the third party (the sub-contractor) has agreed. The employer could not force an unwilling sub-contractor to accept such substitution.

The M.B.A. has an approved form of contract between Contractor and sub-contractor. It is possible that this document is in common use at other centres, I can speak only of Cape Town, where in spite of all my inquiries, I was unable to unearth a copy. In my opinion the use of such a sub-contract form as standard building practice would be most desirable. This contract form might be amended to include a surety clause so that the nominated sub-contractor could be satisfied that the contractor will fulfil his obligations. The same contract form might give the employer the right in the event of the determination of the main building contract to take over the rights and duties of the contractor in relation to the sub-contractor.

If it is considered that the use of such standard sub-contract with a surety clause is a desirable provision, Clause 15 of the main standard contract would have to be altered making it imperative that the contractor shall enter into such a contract with all nominated sub-contractors.

The letter of invitation to the sub-contractor is important, too, but should not be difficult to draft. It would give, inter alia, the general contractor's name, state that the sub-contractor must sign the standard sub-contract with the general contractor and mention who are to be the signatories of the surety clause. The latter would probably be the same as the builder's sureties in the main contract.

There is one aspect of the problem which the above procedure does not completely solve.

It is not unusual, particularly in times of shortages such as these, that specialists' prices are accepted before the main contract is let. I am afraid that in this case there is only the possibility of asking the specialist if he will agree to the substitution of a sub-contract in lieu of the direct contract which he has with the building owner. It is impossible to invite tenders from specialists with the condition that they must be prepared to be sub-contractors to someone as yet unknown.

Finally, may I suggest that on the back of the Institute's form of certificate some form be printed whereon the architect can indicate the amounts included in the certificate for payment to nominated sub-contractors. This should appear on the counterfoil as well.

DISCUSSION

THE PRESIDENT-IN-CHIEF said that, in thanking Mr. Andrews for his most valuable contribution, he wished to revert to a point included in his Presidential Address to Congress—the fact that there were, to him, an almost alarming number of arbitrations resulting from building disputes. It appeared to him, and to those who had acted as Arbitrators, that the real reason was the lack of knowledge of the obligations of the Architect, the Contractor and the Sub-Contractors under the standard form of contract. That was all he wished to say at this stage. Mr. Dudley Mann might enlarge on the point in his paper on "Arbitration." Incidentally, he noticed that Mr. Haddon was itching to speak!

MR. HADDON said Mr. Andrews' paper was so full of meat that he would prefer to read it before making any detailed comment. Obviously Mr. Andrews was vitally concerned with the position that had arisen because of the South African Law of Judicial Management. At this stage he could only suggest—and possibly Mr. Andrews would agree—it was possible for the learned judge to be wrong and for the Appellate Division to upset the decision.

MR. ANDREWS: I concur!

MR. HADDON suggested that Mr. Andrews' paper should be published in the "Architectural Record" and those members who wished to submit their comments could write letters to the Editor. It was difficult, just listening to a paper of this nature, to follow closely all that was read. But he felt that if an architect understood the contract document and used his intelligence to clear up ambiguities, or what he thought were difficulties in wording, at the time of inviting tenders from specialists or from supplying merchants, and at the time of issuing certificates, a good many of the troubles referred to would not arise.

MR. FAIR asked if there were a similarity in the contract documents used in the four Provinces.

THE PRESIDENT-IN-CHIEF replied that the contract was a standard form, applied nationally, agreed to by the Institute, the Chapter and the National Federation of Master Builders.

MR. FAIR asked if one of the sub-contractors, such as the plumber, through the Builder, complained at an early stage and asked for protection—he was not a nominated sub-contractor—was there any way in which the Architect could assist him? Assume on a small house contract work had reached the stage when the sub-contractor was owed the sum of £300. If the Architect went to the extent of certifying the full amount, the general contractor's interest in the job would fall away completely. It was almost impossible to bring him back on to the job to put faults right, particularly if they were plumbing or electrical faults. Was there any clause in the contract on which the Architect could act?

MR. ANDREWS said he had not clearly followed the point raised. If there was a nominated sub-contractor, the Architect had no dealings with him at all—only through the Builder.

MR. FAIR said his point was, once the General Contractor had been paid sufficient to cover his own work, and he was still owing money to his sub-contractor, he had no further financial interest in the job.

MR. ROGERS COOKE said the Retention Sum was the answer.

THE PRESIDENT-IN-CHIEF expressed the view that under the standard form of building contract the Architect had no power to assist the sub-contractor, in the case cited by Mr. Fair.

MR. HADDON said, if he understood the point raised, Mr. Fair was not so much concerned with assisting the plumber as with getting the job finished. Where maintenance repairs were required, as cited by Mr. Fair, the Architect was not without power, under other clauses in the contract, to proceed. The Architect could put the other clauses into operation, call in someone else to do the work necessarily required, and deduct the value thereof in settling the final account. What happened between the plumber and the main contractor had nothing to do with the owner.

MR. COMMIS said the position at the Cape was somewhat chaotic as a result of the two judgments referred to. Personally—and he thought Mr. Andrews agreed—he felt there was a chance of those judgments being upset if they were taken to appeal. But at the moment they stood, and as the sub-contractors did not appear to feel that they should go to the expense of appealing, they were placed in a very invidious position. As a result Architects were getting all sorts of endorsements on tenders which made ordinary practice very difficult.

At the Cape there was a Joint Practice Committee, of Architects, Quantity Surveyors and Builders. At a recent meeting, which was very largely attended, the whole position was discussed. Because of what he felt was a very serious position—the doubts and ambiguities and uncertainties of the Architect's legal obligations both to the contractor and to the client—he suggested that the Central Council would be doing a considerable service to the Profession by having a special article published in the "Record" so that the Architect in practice would know definitely where he stood. The same uncertainty applied to University undergraduates who had been in practice a short while; they had very hazy ideas of the position.

MR. MOERDYK said Mr. Fair had asked a very important question, which had not been answered. As he understood the question there was a contractor who had finished a considerable part of the house. There was a sub-contractor who had



to complete that house and to whom an amount of £300 would be owing. There was a retention of £300.

Assuming the contractor was going bankrupt and the sub-contractor had not completed his work. What was the position?

There was no legal ground to stand on. If one treated this question legally, one had to let the contractor go bankrupt and the sub-contractor would settle up, or alternatively would not carry out his work. The result was that the owner would suffer tremendously because the insolvent estate would have to be wound up then he would have to call for tenders again, and the amount of money lost would run into hundreds.

MR. MILLARD said he wished to add to Mr. Commin's remarks and to suggest that the Institute should inaugurate a series of papers on the full implications of the contract document. He had approached Mr. Haddon, who had given him some excellent advice. But Mr. Haddon's remark that any person of intelligence could prepare a contract document, fell rather flat. Younger practitioners were not aware of the pitfalls. As a result they had to go to people like Mr. Haddon, who were very busy. For that reason he urged that if the younger practitioners could have some document that they could refer to, even if it took the form of articles in the "Architectural Record," he felt that a great deal of improvement could be effected.

Mr. ANDREWS, in reply, said Mr. Fair had asked whether the same standard, national contract document was used. It was worse than that, in his opinion. It was an R.I.B.A. contract form, drawn up for English law, trying to operate in a country where Roman-Dutch Law was the law of the country. This was the second occasion on which the matter had

been considered by the South African Courts. Once before in connection with Clause 25, the Transvaal Provincial Division of the Supreme Court "tore it to pieces."

With particular reference to the Kennedy case, he had the opportunity of discussing the various legal implications of the contract document with some fourteen Cape Town advocates. As a result, he urged it was about time the Institute redrafted the entire contract form. ("Hear, hear.") There were too many "hereinafter" and "hereinbefore mentioned's" to his liking. They could well leave the English law out and apply the document to the Roman-Dutch law, operative in South Africa.

MR. HADDON suggested, in view of the comments made by Mr. Commin and Mr. Millard Mr. Andrews should draft the article for the "Architectural Record," and he would be glad to collaborate.

THE PRESIDENT-IN-CHIEF said if the Congress accepted Mr. Millard's suggestion—and he did not see why it should not be accepted—it was a serious reflection on the training in Professional Practice afforded by the Universities. If the suggestion were adopted, then it was a matter for the Central Council to give serious attention to.

CONGRESS adopted the suggestion, *nem. con.*

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THE PRESIDENT-IN-CHIEF: I now have pleasure in calling upon Mr. Dudley Mann to read his paper. Mr. Mann is a well-known member of the Chapter; he is also a Fellow of the Institute of Arbitrators; and he is a Consultant Quantity Surveyor to the Transvaal Provincial Administration.

ARBITRATION IN BUILDING DISPUTES

By DUDLEY S. MANN, F.S.I., M.C.Q.S., F.Inst. Arb.

SETTLEMENT OF DISPUTE

The three common methods of settling disputes are by force (whether it be by argument or by arms), by action at law, and by arbitration. To-day I propose to deal very briefly with the last of the three.

The term 'arbitration' implies the settling of disputes by referring them for decision to one, two, or more persons termed 'Arbitrators.' The dictionary describes an Arbitrator, or Arbitrer, as "One who has power to decide according to his absolute pleasure." This is a very sweeping assertion and it is not literally true—especially if an arbitrator wants his award upheld in law; for he must at least give a decision which is capable of performances, in fact there are, in all, about eleven essentials with which an Award must comply if it is not to be upset in the Courts.

EARLY HISTORY

Arbitration as a means for settling disputes dates back many hundreds of years. The first Arbitration Act in English law was enacted as far back as 1697, and even that was passed with a view to regulating the precepts and practices of arbitrations, which had by then become a recognised means for deciding matters of difference.

From time to time further provisions and acts were placed on the Statute books, including the Common Law Procedure Act in 1854, and then in 1889 the Arbitration Act was passed. Subsequent Acts have added to or amended this Act, but the provisions contained therein are the guiding principles which dominate the practice of arbitration today, both in England and in South Africa.

The chief objects of the Arbitration Act were, to consolidate the whole of the existing law on the subject into one Act; to render more binding and more readily enforceable any agreement to submit to Arbitration; and to make the decisions of arbitrators more readily enforceable.

South African Acts

Arbitration in South Africa is governed by various Ordinances in each Province, all of which are more or less similar, since all are based on the English Arbitration Act of 1889.

The laws in force here are: Cape Arbitration Act, 1896; Natal Arbitration Act, 1898; and the Transvaal Arbitration Ordinance, 1904.

Natal Act

It is interesting to note that in the preparation of the Natal Act from the English Acts the terms "Official Referee" and "Special Referee" were left in, although the meaning of these titles is quite different in the two countries.

Common Law Bearing

Chief Justice de Villiers, in 1898, said that he was not prepared to say that the whole body of the English Law relating to Arbitration had been introduced to the entire exclusion of the Roman Dutch Law, so that the Common Law will always have a bearing on Arbitration as a complement to the Arbitration Acts and Ordinances.

Roman Dutch Law

A study of the Roman Dutch Law is really most interesting. Here is a sentence or two taken from "Voet," Book IV: "All persons not prohibited can be arbitrators, even priests, also Jews, also men who have lost their status and men who have become freed, since there is no dignity in the office . . . Moreover also the civil law did not permit women on account of the modesty due to the sex to take the office of arbitrator."

SCOPE OF PAPER

In this paper only arbitrations by consent **out of Court** are considered. Reference **under** Order of Court have many additional regulations which would not apply to an arbitration arising out of the usual conditions governing a Building Contract.

Similarly the Ordinance considered is the Transvaal Ordinance, passed on 28th July, 1904, and described therein as an ordinance "to provide for the settlement of differences by arbitration."

Term "Arbitrator"

Throughout this paper I have used the term "Arbitrator" in its broadest sense, including not only a single arbitrator but also more than one, or an umpire.

Persons capable of becoming "parties" to an Arbitration

Broadly speaking anyone may be a party to an arbitration who is capable of entering into a binding contract—such as a building contract is. Thus infants are excepted, and lunatics also a bankrupt as regards his estate though the trustee can

become a party. If there is more than one trustee then all must agree to become 'parties', and this also applies to partners, corporations, etc. Women are also barred if they offer themselves as security in a submission, or, if married, they have not obtained their husband's consent according to our laws.

Exemptions under Ordinance

The Transvaal Arbitration Ordinance, or the Natal and Cape Acts, apply to arbitrations except where the agreement is a verbal one; or where the parties have definitely agreed to exclude the whole, or any part of its provisions; or where the arbitration falls under any special statute the provisions of which are inconsistent with the Ordinance or Act. Provision is also made for the exclusion of matters relating to status; matrimonial causes; matters in which minors or others under legal disability may be interested; and criminal matters so far as the prosecution or punishment thereof is concerned.

The English Statute does not contain this, or any similar section.

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Before turning from the general to the more specific details of arbitration I feel that I must apologise for the very scanty information I am able to give, but in such a limited time as is available only a very brief survey of the law and practice of arbitration can possibly be made.

Terms of Submission

The agreement under which a matter is referred to arbitration is generally called the "Submission."

This agreement need only set out clearly that the parties concerned do agree to submit the matter to arbitration.

If it is to fall under the Ordinance, or the Acts, it must be in writing, and it can be one of several forms. The ordinary agreement under hand, or the written submission by deed under seal for a Corporation, etc.

The agreement need not be in one document, it may be concluded in letters forming part of a correspondence between parties, providing these letters clearly show that the parties do agree to a reference, and that they all agree to the same terms of reference.

Signatures to a Submission

The deed of submission is generally signed by all the parties concerned, or in the case of a Corporation it is signed under seal. It is not always necessary for all parties to sign, as for example when there is an arbitration clause in an insurance policy, or in a building contract.

A deed of submission creates an absolute contract, and a person will be liable to an action for breach of contract if he refuses to enter into an arbitration after having agreed to do so.

Terms of a Submission

The terms of a submission should be clear, showing what disputes will be referred to arbitration. The subject matter must be legal, otherwise no binding award can be made; and if the terms oust the jurisdiction of the Courts, it will be void.

It may be as well to run through the provisions which are implied in a written submission, for unless any of these are specifically excluded or amended they will be as binding as if they were inserted in the written submission.

There are nine in all.

The reference to be to a single arbitrator.

If the reference is to two arbitrators, then they may appoint an umpire within the period during which they have powers to make an award.

The award must be made in writing within three months, or within such extended time as the arbitrators may fix, provided that such further time shall not exceed four months.

If the arbitrators fail to make an award within the prescribed period, or cannot agree, then the umpire may enter on the reference.

The umpire is to make an award one month after the original, or extended, time of the arbitration.

All parties shall submit to be examined on oath, or by affirmation, and shall produce all required documents.

Witnesses, as well as the parties, may be examined on oath, or by affirmation.

The award to be binding on all parties.

Incidence of costs to be settled by the arbitrator or umpire.

Amendment of Submission

Generally speaking, a submission cannot be amended, especially not by the arbitrator. The exception to this is when both parties mutually consent to an amendment. They can if they so desire, give the arbitrator power to determine on matters which may arise in dispute after the original submission was signed.

Revocation of Submission

Similarly, a submission cannot be revoked except under special circumstances, such as:

By mutual consent of both parties;
Generally by the death of one party;

By an express Act of Parliament;

By one of the parties applying to and obtaining leave from the Courts, or a Judge.

This would apply where interest, or bias, or misconduct on the part of the arbitrator could be proved, or the insolvency of one party might be accepted as just grounds.

Submission an Order of Court

Originally, under Common Law, neither party could invoke the aid of the Courts, but now either side can compel the other to go on with the arbitration, as Section 3 of the Ordinance lays down that a submission shall have the same effect in all respects as if it had been made an Order of Court.

Enforcing a Submission

The Courts, however, will seldom enforce a party to a submission, but there are other means by which it can be enforced. An action at law can be brought for damages for breach of contract; or the arbitrator can proceed in the absence of the obstructing party—that is, *ex parte*. This is very effective, but the obstructing party must be given due notice.

Obstructions to the enforcement of a submission may be made by commencing an action in the Courts covering the same ground as the submission. This can be met by an application to the Courts to stay the proceedings, which again may be resisted on several grounds, such as:

That the arbitrator is not a fit or proper person to determine the dispute, either by reason of bias, or misconduct;

That the claim in the proceedings exceeds the scope of the arbitration agreement;

That the substantial point in the case is a point of law, or that there is a preliminary point of law to be decided.

There are several other grounds, but, broadly speaking, they can all be summarised under two headings:

That the applicant has acquiesced in the action at law, or

On legal grounds, or points of law.

To maintain intact his right to arbitration a defendant should object to the making of any order by the Court, for if he does not do so he will not be entitled to ask for a stay in the proceedings.

Form of Award

No particular form is required in law for the Award, but it should be clear.

Generally it is in two parts:

Recitals—summary of dispute, names of parties, etc.; and Operative part—giving definite decisions.

Must not be prejudicial to outside parties

In making an award an arbitrator must remember that he cannot make an award which is prejudicial to any person who is not a party to the submission.

Award assumed as Good

The onus is always on an objector to show that on its face an award is bad, for the ordinary rule of law applies

that if the parties have agreed to go to arbitration they cannot, so long as an award is good upon its face, object to it as erroneous in law, or in fact.

Essentials of Valid Award

We may save time if, without considering further non-essentials, we consider instead the essentials of a valid award. They are not laid down in any one section of the Ordinance, but have been arrived at by collecting essential points from the various sections, and from decisions given by the Courts at various times. Briefly they are:

The award must be made within the prescribed time;

It must be in writing, unless a contrary intention is expressed in the submission;

It should comply with any special directions contained in the submission, for example, advertised in a special paper if so directed;

It must be certain in meaning, there should be nothing ambiguous about it;

It must be consistent in all its parts, and not in any way contradictory;

It must not exceed the scope of the submission, unless so agreed to in writing by the parties;

It must be directed to all the matters referred, that is, it must be complete;

It must be final;

It ought to contain any directions necessary for its proper performance;

It must be legal, and capable of performance;

It must be properly executed (generally if there are two arbitrators both should sign it, or two out of three arbitrators)

Publication and Delivery of Award

Generally an arbitrator, on the completion of his work, notifies both parties that his Award is ready and can be had on payment of his fees. In this way an arbitrator may be saved the necessity of suing for his fees. The taking up of an award amounts to a waiver of any objection which a party may previously have raised and is tantamount to the adoption and ratification of the award.

Finality of Award

Once an arbitrator has given his decision on any point, an action on a similar point cannot be commenced. If his award is in all respects a valid one there is no appeal from it, the Courts can only refer it back or set it aside altogether, but it cannot be varied or substituted by a fresh decision. A valid award binds the successor in title as well as the original owners who agreed to the arbitration.

Enforcement of Award

Before an award can be enforced by the Courts, an application is first of all necessary to make the award a rule of court, then it may be enforced in the same manner as a

judgment, or order of the same effect. For the purpose of suing upon an award however, neither by common law nor by statute is it necessary that such an award should previously have been made an order of Court.

In moving to have an award made a rule of Court no petition is necessary, only a notice of motion supported by a formal affidavit.

It has been laid down that, "A writ cannot be issued against an award of arbitrators as long as the award has not been made a rule of Court."

Reasons Need Not be stated

An arbitrator is not called upon to give reasons for his award, and it is unwise for him to do so. It is sufficient for him to give decisions without explaining them. I strongly recommend to all those who find themselves in the rôle of an arbitrator, never to give reasons for the award they arrive at.

Fixing dates and place of hearing

The hearing of an arbitration case is in technical parlance, the "reference." Prior to the hearing taking place it is advisable to call a preliminary informal meeting of the parties to discuss matters, to fix a place of hearing, and a date on which to commence.

Whilst arrangements to suit all parties are naturally the best, the arbitrator can, if he so desires, and subject to the submission being silent on these points, fix the date and place of hearing; and all subsequent postponements or adjournments are entirely at his discretion.

Prior to this informal meeting the arbitrator is well advised to make a careful study of the submission, deciding exactly its scope; as he is bound by, and can only make decisions on, the points enumerated in the submission.

Notes of Evidence

Notes of the evidence should always be made by the arbitrator, although he is entitled to have somebody else to do this for him under his direction. An arbitrator's notes are his own, and production cannot be compelled by the Courts any more than a Judge's minutes.

Order of evidence

At the hearing the order of hearing usually follows *Nisi prius* cases in the Courts. First the Claimant opens his case and produces his witnesses.

Then the Respondent, or Defendant, follows suit.

The Respondent then sums up his case.

To which the Claimant replies.

And finally the arbitrator sums up if he so desires, and later gives his written award.

The rules of procedure should be observed by arbitrators almost as carefully as by Courts of Justice, without perhaps some of the strict formality of the latter.

Costs

The arbitrator's remuneration should be agreed to with the parties at the commencement of the reference, otherwise he fixes his own fees. He can hold up an award until his fees are paid, otherwise he must recover his fees by an action. An architect or quantity surveyor is well advised to inform both the parties that his fees will be in accordance with "The Architects and Quantity Surveyors Act No. 18 of 1927, Regulation 85(1), or 86(8)." In addition he should, unlike Counsel, claim his expenses.

Under the "Schedule of Provisions to be implied," which forms part of the Ordinance, it is laid down that "the costs of the reference and award shall be in the discretion of the arbitrator . . . who may direct to and by whom and in what manner those costs . . . shall be paid."

When the submission provides that "costs shall abide the event," the arbitrator has no control over the costs, and so his award should be silent respecting them.

The powers of an arbitrator are such that his award as to costs cannot readily be upset. He may award a lump sum for costs, and he may award costs to a losing party instead of to the successful one.

Since the arbitrator's powers come to an end when he has made his award, his certificate of costs must be included in his award and not issued as a later document.

Qualifications of an Arbitrator

The question of the qualification for an arbitrator which most frequently arises, especially in building disputes, is when the arbitrator is an employee of one of the parties. If such a relationship was known to both parties at the time the appointment was made he is not disqualified from acting, even though it may involve him in expressing an opinion of his own conduct, or work.

Should, however, the dispute involve the professional reputation of the arbitrator, then it is impossible for him not to be biased and he is disqualified from acting.

When an interested party is to act as an arbitrator, it is essential that he should have been nominated in the contract; for an employee, or servant, cannot be nominated by his employer to act as an arbitrator after the dispute has arisen.

Architects as arbitrators

Subject to the qualifications mentioned it is competent for an architect or quantity surveyor to act as arbitrator in a dispute arising from a building contract on which he is employed in his professional capacity.

Removal or recusation of an arbitrator

Section 11 of the Ordinance covers ground not dealt with in the English Acts. This is the removal or recusation of an arbitrator against whom at any time a just ground of recusation

is found to exist. These "just grounds" are to be found in Nathan's Common Law of South Africa. An action will not lie under this, nor any other Section, against an arbitrator for want of skill, nor for negligence in making his award.

Powers of Arbitrators

The power as conferred by the Ordinance on an arbitrator hearing a building dispute, or any case, include:

The right to call for any necessary documents which could be called for at the trial of any action. The administration, of an oath, or affirmation; and the right to insist, unless legal objection is raised, on evidence being given under oath, or affirmation; Subpoena can be served by an order of the Court, and must be obeyed; such subpoenas can be applied for by either party, or by the arbitrator; To appoint a commissioner to take evidence of a person residing outside the Transvaal Province; To correct in any award any clerical mistake or error arising from any accidental slip or omission.

Oath or Affirmation

The Courts will not set an award aside on the grounds that the witnesses were not sworn, unless an objection was raised at the time, before the arbitrator.

In arbitrations dealing with building disputes I have never yet found it necessary to administer an oath to a witness. Most of the evidence is of a technical nature and not everyday questions of fact.

Assistance for Arbitrator

An arbitrator is allowed to call in assistance from an expert, or an assessor, providing they are not allowed to settle the case for the arbitrator. All they can do is to give the arbitrator an opinion, not to make an award.

When Arbitrator is an Expert

When the arbitrator is himself an expert on the matter referred, as in the case of an architect hearing a building dispute, and so is capable and competent to decide from his own knowledge and personal observation, then it may not be necessary for him to take evidence.

This was a ruling given by a judge in a Building dispute in 1905. Nevertheless either party may claim at any time before the award is made to adduce evidence, unless they are precluded from doing so by the terms of reference.

Comparison of Arbitration and Action at Law

The respective merits of arbitration compared with an action at law opens up a fruitful source for discussion — one which might well be referred to a panel of Arbitrators. If the panel consisted of one member of the Institute of Arbitrators and one member from the Law Society, it is more than likely an Umpire would have to be called in, to arbitrate between the two.

The advantages claimed for arbitration compared with an action at law can be tabulated into:

Technical matters may be referred to an expert. If referred to a Court of Law, the judge may not have any technical knowledge.

Arbitration is usually the more speedy process of the two. And again, of the two, it is generally less expensive.

In arbitration, the parties concerned have a choice of the place, and the date, of hearing.

If property has to be viewed, an arbitrator will more readily do so than will a judge, and

Arbitrations are nearly always conducted privately.

Offsetting these advantages there are certain disadvantages which must not be overlooked. The two principal ones are:

In the Courts you will get a sounder opinion on a point of law; and

If the dispute arises out of a charge of fraud, the party concerned may probably prefer a public, to a private hearing.

CONCLUSION

In conclusion I offer a few practical suggestions to those architects or surveyors likely to be called upon to act as arbitrators in building disputes.

See that the Arbitration Clause (Clause 26 in the Master Builders' contract form) is completed before the contract is signed.

Be very careful never to discuss any aspect of the case with either party unless the other party is also present.

Never express even the mildest of opinions on the merits or demerits of the case at any time during the Reference.

Study the Submission carefully before you hold even a preliminary meeting.

Make certain that your award deals with all the points referred to you and to no others; and if you have control over the costs include your certificate of costs in your award.

Do not state the reasons for your award, or attempt to analyse the evidence.

And finally do not let your heart rule your head. Remember that in acting as an Arbitrator under a contract such as our usual building contract, your duties are so circumscribed, and the opportunity for the exercise of your individual judgment is so limited (although I admit that the interpretation of some of the clauses in the contracts leave room for a difference of opinion) that it is really a misnomer to call yourself an arbitrator. But to define yourself as a quasi-arbitrator (as we are sometimes called) is more correct.

THE PRESIDENT-IN-CHIEF: We are indeed grateful to Mr. Mann for a very interesting and informative paper, which I feel should be included in our permanent records as a work of reference. ("Hear, hear.")

MATTERS RAISED BY INDIVIDUAL MEMBERS

THE PRESIDENT-IN-CHIEF said that, as the agenda had been completed in respect of Papers to be read, Congress would now consider matters to be raised by individual members.

BUILDING CONTROL

MR. STAKESBY LEWIS said he felt sure everyone present supported the suggested removal of Control on houses as a commencement of total abolition. Because of the constantly changing policy of the Building Controller, the unwieldy administration, the continual change and lack of staff, considerable delays and confusion had resulted, which in turn had brought about a considerable rise in the cost of building and inefficiency in production. He therefore wished to move:

"That this Congress is of opinion that, for various reasons, the time has come to recommend to the Authorities concerned the immediate removal of Control over all types of housing, as a first step towards the total abolition of Building Control, which event should be affected within the next twelve months."

MR. HODGE suggested that the value of houses should be mentioned. "All houses" was a very wide term; the amount should be indicated.

MR. DUDLEY MANN said he would second the motion if the mover would amend the wording "for various reasons" to "It is the considered opinion of the Congress." If "for various reasons" appeared, it would simply involve delay in that the Authorities would ask what the "various reasons" were.

MR. STAKESBY LEWIS accepted Mr. Mann's amendment.

MR. FAIR suggested, as a further amendment, that Control should be immediately lifted so as to permit the erection of houses up to 2,000 square feet, as a preliminary step.

MR. STAKESBY LEWIS accepted Mr. Fair's amendment.

MR. COMMIS said he had discussed this very point with the District Controller at Cape Town, who said it would be impossible to check up on whether a man was building a house of 2,150 or 2,500 or 3,000 square feet. They did not have the staff. The District Controller agreed with the suggestion that the check should be on the plans, and that a week be allowed for the administrative registration of permits; he thought that would be reasonable, if the Government thought fit. But just to say that people could build a house without reference to Control would make it impossible for Control to keep an eye on those people who might want to exceed the area permitted.

THE PRESIDENT-IN-CHIEF said he did not think it was necessary to go into the implications and details. He felt sure they were all agreed on what should be done. He suggested

it be left to the Central Council to convey the views of the Profession to the authorities.

MR. MOERDYK said he wished to offer another amendment: substitute "housing" for "houses." Building smaller houses did not necessarily solve the housing problem. A block of flats would be much more effective; why should a block of flats be prohibited and all these small houses go up?

MR. STAKESBY LEWIS replied that the shortage of steel was a very important factor.

MR. MOERDYK submitted that if a shortage of steel stopped one from building a block of flats, then it would not be built. But why should the Government butt in and stop people from building blocks of flats? People should be allowed to build if they could get steel from other parts of the world. If people were not allowed to build, they would not try to get material; if they were allowed to build they would try.

MR. BARTHOLOMEW asked if members had fully considered the implication of the proposed resolution. The Government Authorities were saying how much building could be done because they knew the commodities which were available, and they knew the labour force available. How could they control building if they released one section without any control whatever? He was on the Building Control Advisory Committee in Durban; he knew of the great delay in housing, but they were trying to keep a balance as between "Industrial," "Domestic" and so on. He felt they should try and leave it to their experts.

THE PRESIDENT-IN-CHIEF said the Profession wanted to know: they had never found out who the experts were.

MR. FAIR said it was doubtful whether the authorities themselves were in a position to state the true position. The Authorities really did not know; they were understaffed; they were really groping. The issue of permits was based on assumptions and estimates. They had no concrete facts to argue on. He thought the Authorities were just as much "in the dark" as the Profession was.

THE PRESIDENT IN CHIEF asked if Congress agreed to refer the matter to the Central Council, in the light of the discussion; the Central Council would then have the original resolution, the various amendments, and a full minute of the discussion.

AGREED

ADVICE TO YOUNGER PRACTITIONERS

MR. CANDIOTES referred to the suggestion made by Mr. Millard during the discussion on Mr. Andrews' paper about

the necessity for helping the younger practitioners, in particular in regard to the contract document. Mr. Andrews, in his valuable paper, based on his recent experiences, had brought to light further pitfalls facing the Profession in the use of the contract document. Mr. Andrews' suggestion that the document be revised was not only very welcome, but much overdue. Generally speaking, it was only by the hard way of bitter experience and burning of fingers that the Architect, particularly the younger architect, built up his practice.

The President-in-Chief had referred to the increasing number of arbitrations. His (Mr. Candiotes') contention was that those arbitrations would tend to decrease, and even fall away, if the practical knowledge and experience of the established members of both Professions was made available at all times to members seeking such assistance. He therefore wished to move:

That, in addition to a series of articles on the contract document, to be published in the "Architectural Record," the Chairmen of Practice Committees in the various Provinces be available, by appointment, particularly to the new and younger members of both Professions, in order to discuss and guide them in personal difficulties encountered in their practices, with particular reference to the contract document. Furthermore, it is suggested that a donation to the Benevolent Fund, in return for such services, be levied; the amount of the donation to be determined by the Central Council.

MR. ROGERS COOKE said he wished to move, as a separate resolution, that the Central Council should immediately consider the revision of the form of contract, to make it less ambiguous and to provide protection for nominated and other sub-contractors.

THE PRESIDENT-IN-CHIEF said that, as Mr. Rogers Cooke's was an entirely separate resolution, it should be raised later. For the time being, he asked Congress if it approved of the suggestions made by Mr. Candiotes and Mr. Millard.

AGREED.

SUGGESTED REVISION OF BUILDING CONTRACT

THE PRESIDENT-IN-CHIEF suggested that Congress now consider Mr. Rogers Cooke's resolution. He asked if there was a seconder.

MR PERCICK seconded.

MR. HANSON said he could not agree with the resolution. He felt that the contract document had been rather maligned at the Congress. Certain cases had been mentioned but he would like to know of any contract document which had not led to more litigation than the Building Contract. There was every reason to believe that much litigation was stopped at the level when the lawyers looked at the contract document. A number of issues were never brought to Court because the contract document by and large was quite a sensible

document. He therefore doubted the wisdom of considering amendments at this stage. He would like to hear an alternative suggestion.

The PRESIDENT-IN-CHIEF asked Mr. Rogers Cooke if he would modify his resolution to asking the Central Council to investigate and, if necessary, amend the contract document.

MR. ROGERS COOKE recorded his agreement with the President-in-Chief's suggestion, which was adopted by Congress.

URBAN AESTHETICS IN RELATION TO THE SMALLER TOWNS OF THE UNION.

MR. GORDON CHALMERS: Our present activities, I feel, are almost entirely devoted to the established cities, Durban, Cape Town, Johannesburg, Bloemfontein, Pretoria, and others, where the sins of our fathers are being visited upon us. We must make the best of a bad job here.

I think it was Mr. Harper who criticised Mr. Fassler yesterday on the question of the Urban Aesthetics of existing South African cities. Mr. Harper suggested that city buildings should be designed so that the street approach should be at the back of the building and that the front of the building should face on park lands and open spaces, free from the hazards of traffic. As to the benefits accruing from such a design, there was no doubt, but how are we to achieve this result in our South African towns? We shall not achieve it unless we act now, and not in five or ten years' time.

In this respect Mr. Massey's recommendation that Architects must go to the people, and not the people come to Architects, deserves, I think, the fullest support. The Profession, through the Institute, must be in the vanguard and not, shall I say, in the guard's van of urban development. ("Hear, hear.")

As far as development in such places as the Orange Free State gold mining areas is concerned, the Profession is, I believe, fully alive to the possible damage that may result from inadequate initial planning, or its entire absence; and suitable steps are being taken to ensure that a sound framework is being laid down within which the anticipated new Free State towns may develop in the most efficient and amenable manner possible. But what is true of the Free State gold mining areas is unfortunately not true of many of the smaller towns throughout the Union, towns whose future industrial development is assured.

Dealing with Natal alone, and taking at random only a few of the small towns, let us for a moment consider such places as Colenso, Ladysmith, Newcastle—on the main Johannesburg-Durban route. In all these places there is undoubtedly scope for large-scale industrial development. In Ladysmith alone we read in the Press of extensive proposed development in the textile industry. Are we to stand aside and

allow urban development in these areas to take place unplanned and uncontrolled, creating a chaos comparable to that existing in our larger cities to-day?

Such a state of affairs cannot and must not be allowed to take place. Are we to wait until the Town Clerk of say Amanzimtoti or Port Shepstone appeals to the Institute before we as a body consider the rendering of aid? No, sir; we must act before such appeals are made. And, in furtherance of this idea, I would earnestly commend to the consideration of the Provincial Institutes and the Central Council the establishment of a permanent body to examine and advise on the future development of all our South African towns. There is no one more qualified or better fitted than the Architect or the Town Planner in this regard.

Much spade work has already been done by the Social and Economic Planning Council, as evidenced in its Report No. 5 and other Reports. The Profession cannot to a great degree assist in the implementation of this Council's recommendations by acting along the lines suggested.

In conclusion, may I repeat my suggestion not to allow the immense problems besetting us in the large cities to cloud and even entirely obscure the problems facing the smaller towns in this country in their future development. (Applause.)

MR. FASSLER said he would like to move a resolution; which he hoped would meet the point raised by Mr. Chalmers: "That this Institute, through its Constituent Bodies, should take up the question of seriously endeavouring to improve the environment of our urban centres, including Native Housing, and that Municipalities should be approached, where this has not already been done, to establish Advisory Committees to assist them in their work towards this end."

MR. MASEY said he would like to add that a lead could be taken from other centres—large and important, centres, too: Paris and London. In support of what Mr. Chalmers had said, he would like to quote the environs of Bloemfontein. Most people approached Bloemfontein by railway. Those coming from the north went through about a mile and a half of goods-sheds, which might easily have been switched elsewhere, at right angles. Those coming from Durban approached Bloemfontein through the sewage farm. Those coming from the south passed the gaol, the brewery and the Native Location, and from the west, passed the greatest mental asylum, he believed, in South Africa. Surely the approach by railway should be through something better, but in their case, north, south, east and west they had to show visitors the worst environment possible.

MR. HOWE said there was one observation he would like to make as a result of the congress proceedings. Emerging from the papers read, the discussions and the information derived, was the necessity of a liaison development with Local Authorities. The example of Pretoria was a happy one. From what Mr. Chalmers and other speakers had said, it was clear that the Profession should take a more direct interest in our environment; not to be quite so parochial, to take a broader view of things, and as and when necessary to give a lead in the development of the community.

For that reason he would like to urge that the Central Council adopt such ways and means as it may consider fit to encourage practitioners to complete their studies in the form of a post-graduate or other Town Planning Course. It seemed to him that that was a natural extension of ordinary architectural training. These courses were now established at, he understood, two Universities. ("Hear, hear.")

APPRECIATION

MR. PRENTICE said he was sure all present would agree they had something to be proud of when they looked back on the two days' sessions of Congress, and that they would be failing in their duty if they did not pass a very hearty vote of thanks to the President-in-Chief for the able way in which he had conducted the proceedings. (Applause.)

THE PRESIDENT-IN-CHIEF said that, in closing the proceedings of this, the Institute's Fourth Congress, he felt he should say that he had studied the verbatim reports of the 1936 and 1939 Congresses. It was more than a little disappointing to find that many problems then confronting the Profession remained unsolved. Nevertheless he was satisfied that the papers and the discussion during this Congress were far more constructive and would form a valuable record and reference to which all members could turn.

He wished to thank those members who had assisted the Central Council and the Constituent Bodies in organising the Congress, and in particular to thank all those who had made the attendance record the best ever known at a Congress of South African Architects and Quantity Surveyors. In conclusion, he wished to record their very deep appreciation to the Natal Provincial Institute, to its members, and especially to the N.P.I. President, Mr. Tomkin, for all that had been done to make the social side of the Congress such an outstanding success. (Applause.)

MR. TOMKIN, on behalf of the Natal Provincial Institute, thanked the President-in-Chief and Congress for their appreciation. Natal Architects and Quantity Surveyors had been grateful for the opportunity of having the Congress in Durban.

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