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SAN MICHELE AT PAVIA

photo Alinari

A peculiarity of the present time, an aftermath of the Great War, is the wave of intense nationalism that is sweeping over the world : one of its phases is manifest in this country in a desire that Art, especially Architecture, shall take a more national form.

Much has appeared in the press or been spoken from the public platform but of all that has been written or spoken nothing has been wider of the mark than the suggestion that Art Schools can train students to produce National Art or that it can be developed by a government subsidy.

Art becomes national by reflecting the characteristics of the nation that produces it just as an artist's work is individual because it reflects his own personality and unless National Art or Individual Art develops naturally it does not develop at all.

To understand the full process of its development we must first disabuse our minds of the popular fallacy that it is the artist who decides what form art shall take for this has always been the prerogative of the patron, the old saying "he that pays the piper calls the tune" applies to all the Arts and whether the idea is palatable to the modern artist or not the fact remains that all down the ages the artist at the best has merely interpreted the ideals and aspirations of the community at large.

I am surprised that of all that has been written on art, particularly on the history of art (and recent publications on this subject are legion) nothing has been produced to show how at all times the art of nations has reflected their peculiar idiosyncrasies and notions.

Faure has written most beautifully all round the subject and Upton Sinclair toyed with it before he side-tracked his Mammon Art into a study of literature alone but so far as I am aware national art has not been given the consideration its importance deserves.

What makes art history so interesting and valuable is that from the study of the art of bygone peoples it is possible to obtain a clear and sure insight into their inner thoughts and possible to understand perfectly what is involved in their national make-up. Your spiritually minded nation will produce profound art and your irreligious nation will produce profane art. A cruel nation will delight in depicting war and violence while your gentle nation will get all the milk of human kindness into its art.

The subject is a large one and in an article such as this, one can but touch on its more obvious aspects. Art is the flower, if we go to the root of the matter we would find that a people is the product of the soil that supports them and just as their whole lives are moulded by environment so in their art, not only the means of expressions, but even its various forms, are largely determined by this factor.

It stands to reason that the further we go back into history when, intercommunication between nations was small, the more pronounced shall we find national traits to be. If we study the art of two of the earliest nations, the Egyptians and the Assyrians we shall learn much about national art.

Long before the hieroglyphics or cuneiform writings were deciphered we knew all about these two nations from the tomb paintings of the one and the carved alabaster slabs of the other, how the Assyrian was fierce and warlike, perhaps the most blood-thirsty individual the world has yet seen, while the Egyptian was the very reverse, peace-loving and industrious, a man who got his living by tending his flocks or cultivating the soil.

There were, of course, exceptions, the Pharoah "that knew not Joseph" was one, but even then the bondage of Egypt could not have been so very terrible since the liberated Israelites wished to return to it after their first experience of the discomforts of nomadic life.

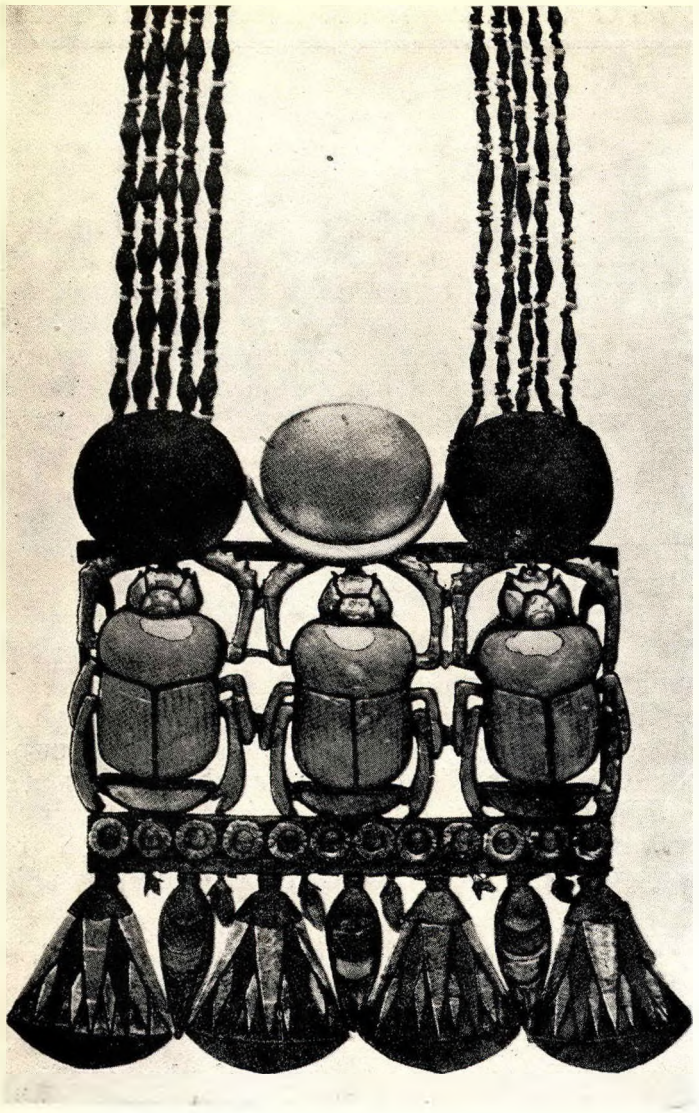


Fig. 1.

The outstanding peculiarity of the Egyptian was his love of religion. His has been cited as the most priest-ridden of all nations but it is hard to believe that even a nation of slaves would permit itself to be controlled through the medium of religion for more than four thousand years if it had not a love of religion. Europe revolted after less than a quarter of that period of priestcraft.

Take away his religion and the Egyptian need for art almost disappears for his religious beliefs were responsible for everything from the Pyramid of the Pharoah to the type of ornament used to decorate his queen's hand-mirror.

Since almost everything in nature was worshipped it is perhaps not surprising to find that practically all ornament was also religion's symbol. The pendant shown in Figure 1 is a case in point for the Solar and Lunar Discs, the Kheper Beetle and the Lotus Fower all had their signification. The strong religious bias of the Egyptian was his most obvious trait but even a brief study of his art will tell us much concerning his other characteristics. That he was of gentle disposition is proved by the importance of the gentler sex in his social life, for a primitive uncultured people invariably suppresses its womenfolk—here their importance is indicated by the prominence of the female form in Egyptian art, perhaps the best known example—one of the most beautiful things of all time—is produced in Figure 2 which shows Nefertiti mother-in-law of Tutankhamen.

It is significant that the female figure is almost entirely absent from Assyrian art, occasionally female prisoners of war are depicted and in one notable instance, given in Figure 3, a queen is portrayed, but how out of his element the Assyrian sculptor was in these cases is proved by an inspection of this last named. It is difficult to believe that the art which produced those amazingly virile pictures of war and the chase such as Figures 5 and 8 could have been responsible for anything so shapeless and unnatural. As a contrast to the stiff formalities of the Assyrian Court as shown in this relief we might compare Figure 4, which gives us some idea of the intimate relations that existed between Nefertiti and her lord and master Ikhnaton.

Almost without exception Assyrian low relief sculpture is devoted to the glorification of brute force. Theirs is the most national art the world has yet seen for it was produced by a people animated by one idea only, the pursuit of War.

In Egypt the artist gave us pictures of every conceivable phase of life from the shepherd tending his flocks to the jeweller working at his bench, that is why we know immeasurably more concerning life in ancient Egypt than we do of life in mediaeval Europe but in the main Assyrian art has two themes only both very much akin. The King and his victorious army at war and the King keep-

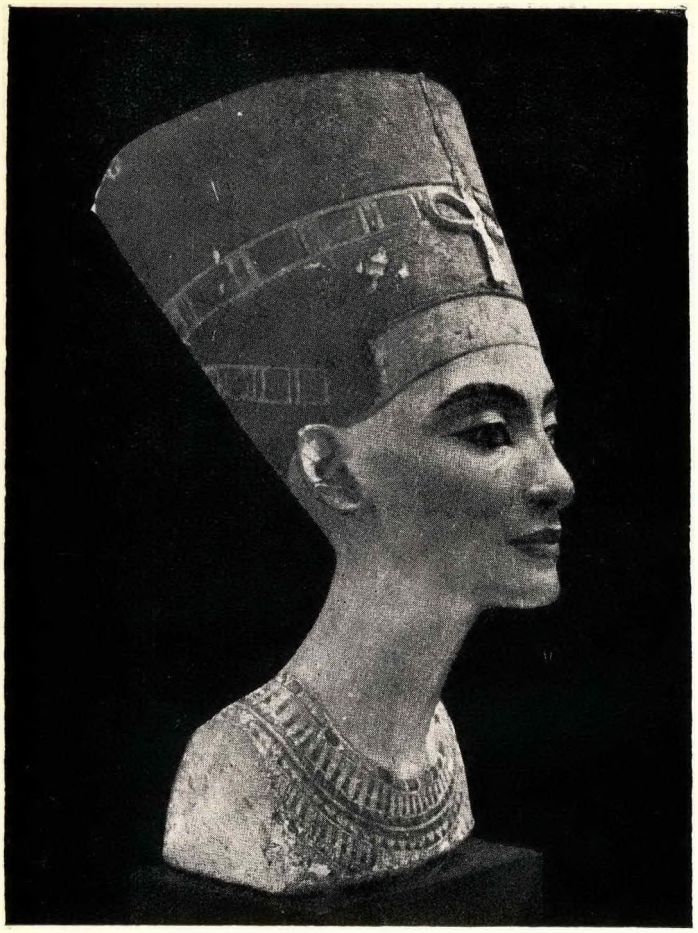


Fig. 2.

Fig. 3.

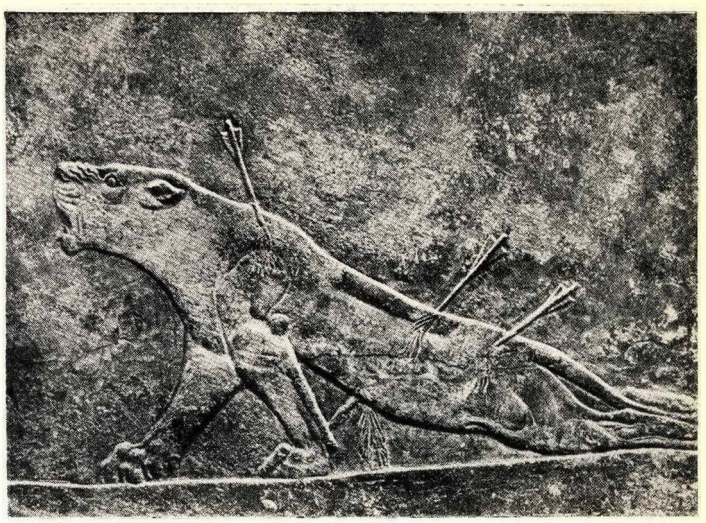
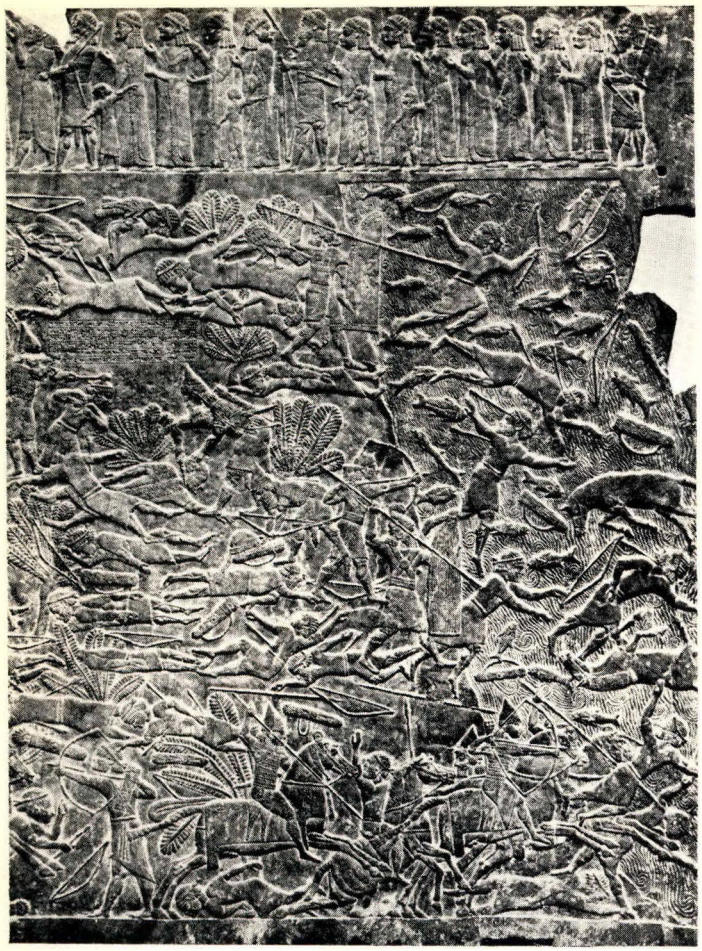


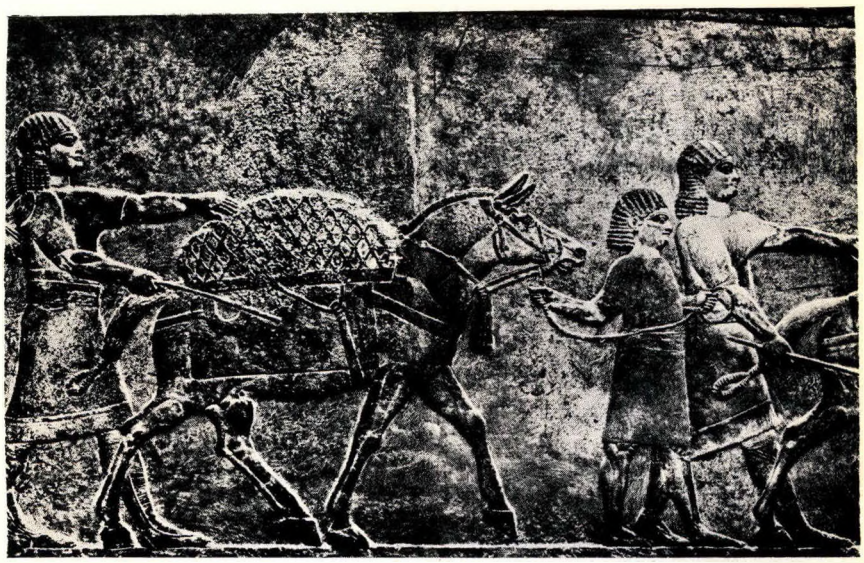
Fig. 5.

Fig. 4.



Ashur – Bani – Pal
attacking a town

Fig. 6.



Ashur – Bani – Pal
hunting lions

Fig. 8.

ing himself fit, during their brief periods of peace, by hunting wild animals.

The main purpose of Assyrian art was undoubtedly to keep alive the war spirit of the nation, the sculptor was the chronicler who made imperishable records of all the details of their many campaigns. These sculptures were used for the decoration of the King's palace and we can well imagine how they would be studied and admired by the officers and men of the army as they guarded the palace, how the soldiers would proudly point to incidents in which they or their fathers had taken part ; such pictures could not help but have the psychological effect of inciting them to further efforts.

How dreadfully realistic these pictures are. Here the vultures on the corpse strewn battlefield peck out the eyes of the fallen or there the King exercises the victor's prerogative in burning out the eyes of his more notable captives. Nothing is omitted, the more revolting the incident the more is it stressed. Even in the apparently peaceful scene shown in Figure 3 where Ashur-bani-pal feasts with his favourite queen, the atmosphere of war is not entirely absent for on the trees to the left—unfortunately just out of our picture—rots the head of Te-umman King of Elam, whom he had recently defeated in war and whose decapitation the Assyrian King and Queen are in fact celebrating.

Assyrian art is seen at its very best in the portrayal of animals, the whole of mankind's artistic effort has produced nothing more intense than the wounded lioness shown in Figure 5.

Of the remaining pictures I have chosen to illustrate this article Figure 6 is a typical example of an Assyrian War scene and Figures 7 and 8 are both hunting scenes, though one is a lyric and the other stark drama.

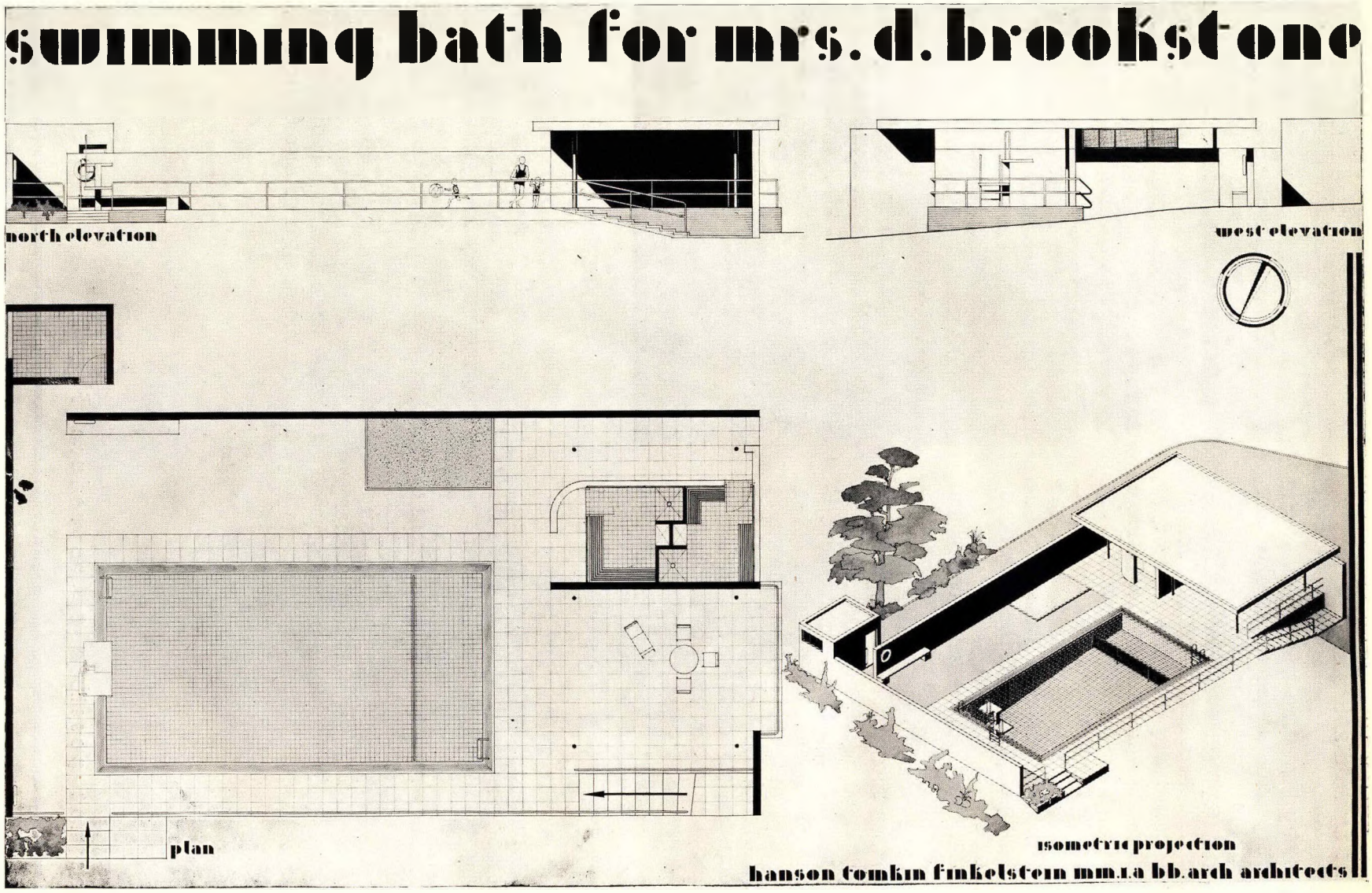
What a charming idyll this Egyptian tomb painting makes. The husband with his decoy duck and hunting cat, the wife with her bouquet of lotus flowers and the diminutive daughter who clasps her father's leg in affectionate embrace, all combine with the delightfully unconcerned birds and fishes to create the most pleasing fantasy. There is no fantasy in the Assyrian scene, here is grim reality nor is there any pity or emotion depicted in those inhuman faces, but still another evidence of the artist's desire to glorify brute force is seen in the strongly accentuated muscles which stand out like whipcords on both man and beast. Compare the Egyptian artist's rendering of the male figure and you will be struck by its lithe, almost effeminate appearance.

I have purposely avoided dwelling on the architectural achievements of the two nations, we need only note that the Assyrian remains are mostly palaces and those of Egypt mainly tombs and temples to realise that the testimony of architecture agrees with that of the kindred arts.

In subsequent articles I hope to show that all down the ages art has been the supreme revealer of national traits—the true historian of mankind, for whereas the scribe can, and often does, lie, the record of art is infallible.

Those who talk of a national art for South Africa would place the cart before the horse. When all the many elements in this country have thoroughly merged and a nation arises, fused into one integral whole, perhaps then we shall see its characteristics reflected in its art. In the meantime I suppose that we shall continue to ape the Cape farm house in our public buildings and domestic dwellings and to hark back to the middle-ages for inspiration in the design of our Churches.

NOTE. It was not possible to reproduce Fig. 7.



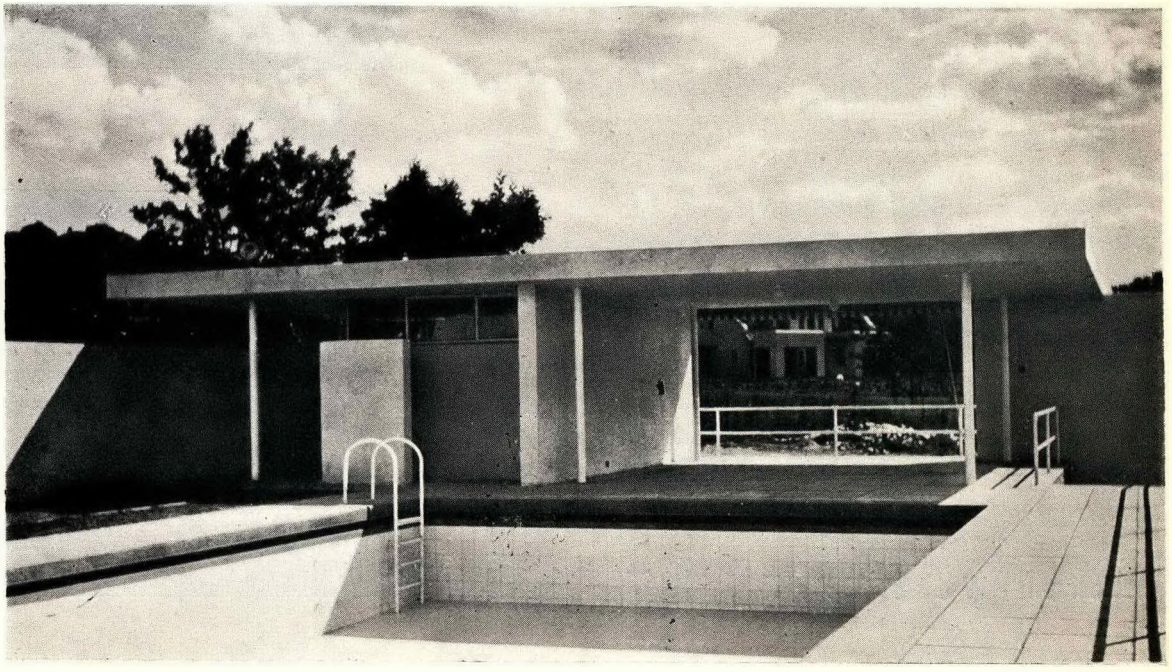
Architects • Hanson Tomkin Finkelstein

drawn by W. D. Howie

The swimming pool group illustrated by the drawing and photographs was recently built in Johannesburg as an auxiliary to a house designed by the same architects. The scheme faces north-west, and is screened from the road which runs past the south side. The complex lies within one plane, adjusted to the sloping site by means of steps on the north side. The major vertical definitions consist of two walls which freely enclose the bath. A secondary plane—the pavilion slab—functions horizontally, leaving the developed space free for practical organization.

Thus the arrangement falls into two parts. The main volume merging with the outer space, the secondary volume providing with its slab a transitional protective element to the west.

The technique of relating spaces functionally is well demonstrated in the design of the pavilion. To achieve the multiple function of providing a defined shelter and

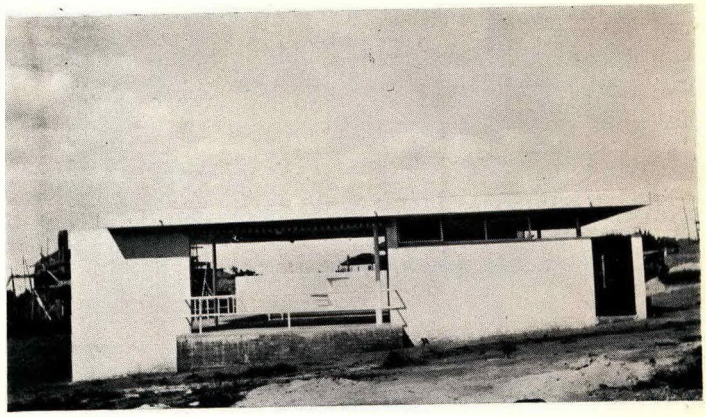


a space for bathing cubicles the architects have used the most direct method of construction, namely a system of steel columns regularly spaced within the area of the reinforced concrete slab. The vertical slabs are non-structural and do not interfere with the sense of buoyancy resulting from this system.

The continuous range of windows to the cubicles is placed directly under the slab to retain the independence of the latter both structurally and visually.

This interesting experiment should be of great value to students of contemporary architecture, particularly in the sense that it has carried into the sphere of South African building the epoch-making researches of Mies van der Rohe. A study of the photographs will show the rightness of these forms in the African scene—the strong metaphysical quality springing from an ordered and generalised technique.

R.M.



West Elevation

North West Corner

MODERN IDEAS ON HEATING AND VENTILATION

PART 2. THE PRACTICAL APPLICATION

By A. D. CLARK ● Dept. of Civil Engineering Witwatersrand University

In the previous article, the conclusion finally arrived at was that ideal conditions were only attained when the correct effective temperature was maintained. It is comparatively easy to make such a statement, but to produce and maintain a correct effective temperature in practice is much more difficult, and in some cases almost impossible. Taking the case of a room in any normal building, the exterior surroundings consist partly of brick, having a low thermal conductivity, and partly of glass, with a conductivity nearly six times greater. For this reason, it is quite often the practice to augment the conditioned air system with some radiant heat unit in an endeavour to balance the unequal heat loss. Before enlarging on this subject, however, it will be better to consider fully the various systems in existence to-day and to discover how nearly they approach to producing correct temperature, humidity and air movement, together with adequate ventilation.

The coal fire in an open Grate.

Here we have one of the most primitive, but nevertheless one of the most popular means of heating. The reason for this popularity certainly cannot result from its efficiency (10 to 20 per cent.) and can therefore only be due to the phsychological comfort effect of being in an enclosed space with some heating medium which not only feels hot, but more important still, it looks hot. This phsychological association of burning with heat is deeply embedded in everybody from their earliest days and, so powerful is this conviction, that it is the cause of some electric radiators being made to imitate the burning effect of a coal fire. The direct heating effect of a coal fire is entirely by radiation, but, in addition, air, passing through the fire and causing combustion, passes up the chimney with the gaseous products of combustion, and, by the heating of the chimney walls, produces a subsidiary heating effect. A secondary heating effect is obtained by the radiant heat from the fire striking the walls and furniture of the room and causing them also to radiate heat and warm the air by convection currents. From a ventilation point of view, a satisfactory feature of the fire in an open grate is that a continuous movement of air in the room accompanies the upward movement of gases through the flue. Unfortunately this ventilating effect is not reliable, as when the fire is but a red, glowing mass, this movement of air is negligible. The nett result of a fire in an average room is generally to produce a sufficiency of heat, usually at the expense of adequate ventilation. There is no control over the humidity, which when the room is occupied for some time, often rises to such a point as to produce a feeling of lassitude.

Hot water and steam radiators

This method of heating has now been in existence for a considerable number of years and is still popular in buildings containing a large number of rooms. The development of this type of building, with the consequent necessity of fires in each room, led to the use of a fluid circulating in every room, this fluid emitting, through the medium of radiators, the heat given to it from a boiler located at one central point in the building. The heat given off by radiators is mainly by radiation and to a lesser degree by convection, the proportion of heat emitted being between 60 and 70 per cent. of the heat available in either water or steam.

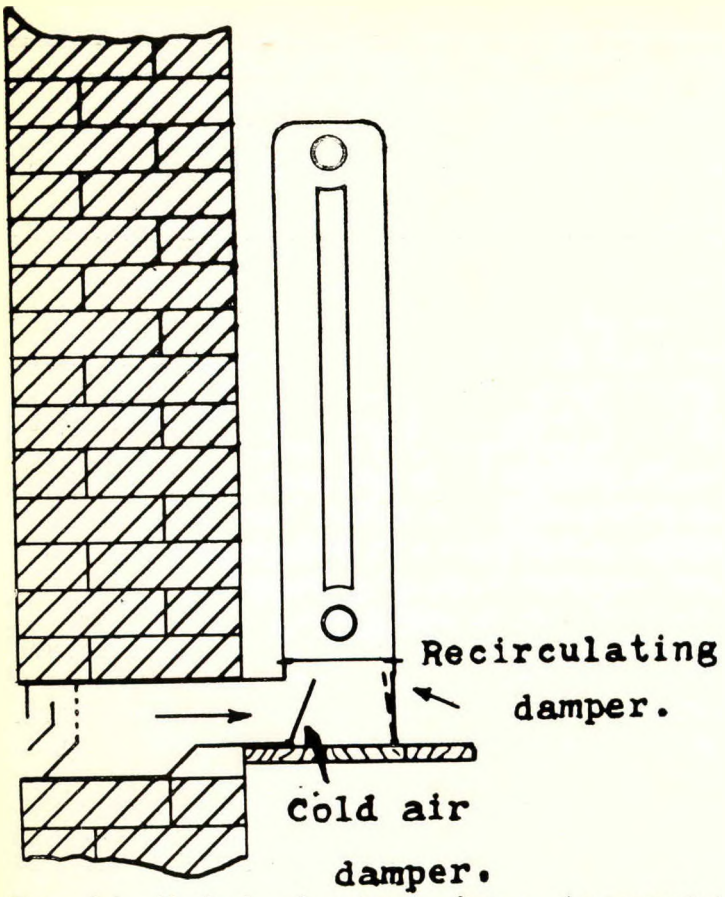


Fig. 1. Method of using radiators for warming ventilating air.

As with all methods of heating, depending mainly upon radiation for their effectiveness, the disadvantage is at once apparent, since the intensity of radiant heat is inversely proportional to the square of the distance from its source. This means that outside a distance of, say, ten feet from the radiator, the radiating effect is negligible and the rest of the room must be warmed by air convection currents. For this reason the usual position for radiators is underneath the windows, so that fresh air entering the room comes into contact with the upward current of hot air from the radiator and is warmed before being circulated round the room. This is very satisfactory in theory, but, unfortunately, does not take into account the many diversities of natural ventilation, such as the strength and direction of the wind, which inevitably play havoc with any attempt at controlled air movement.

Thus we see that this method of heating does allow for the warming of a natural current of fresh air and in this respect is superior to the ordinary coal fire. Once again, however, there is no control over humidity, which means that comfortable conditions may not always be established.

Warm air furnace heating.

This system of heating approximates to the previous method, in which a heating fluid is circulated. Fresh air comes into contact with the heating surfaces of a stove or furnace located in the basement of a building and, by means of ducts, the warm air thus obtained is delivered to the various rooms. Natural circulation was originally relied upon, but the installation of a small fan on the inlet side of the fresh or recirculated air considerably increases the efficiency of the system. In addition, most furnaces have some sort of humidifier consisting of a fairly large tray of water with the level automatically maintained. This is located in the path of the air in such a position as to receive a large amount of heat from the furnace itself. This humidifier can be used when required by controlling the water supply.

Compared with ideal requirements, the warm air furnace heating method seems to be the most satisfactory of those considered up to the present ; both heating and ventilating requirements are satisfied and there is some attempt to raise humidity when necessary. The main reason for its lack of popularity appears to be the lack of control of air distribution in the rooms.

Electric Radiators and heating panels.

Electricity can be made to produce heat by passing it through coils of special resistance wire, wound spirally round an incombustible clay core, and designed to produce a fairly low coil temperature. Electric radiators are seldom made on a large scale and are usually regarded as an auxiliary to augment the main heating system. This, in most cases, implies an inefficient main heating system. Depending on the radiator, of which there are a number of types, the main transmission of heat is

by radiation, the amount of convection occurring being usually negligible. A point in their favour is the ease with which they can be moved to any convenient position and so concentrate the heat where desired. The electric panel heater, though working on the same principle, is undoubtedly in a different class and aims at reproducing the warming effect of the sun in temperate climates. For this reason its usual and most satisfactory location is in the ceiling of a room. Although there can be no doubt about the ability of these panel heaters to produce sufficient radiant heat, yet the one grave argument against them is that they do nothing to promote or assist natural ventilation in any way.

Therefore, in consideration with the needs for ideal heating and ventilation, the panel heater only satisfies the heating condition. However, in conjunction with a conditioned air system, this disadvantage is definitely reversed when the unit is used to balance excessive heat losses at any localised spot, e.g., in front of large windows. In this case the combination becomes ideal, because as the panel heater in the ceiling produces no convection currents, there is no tendency to interfere with the controlled air movement.

The Control of heating systems.

The amount of control over the various heating systems described is an item of importance in connection with the satisfactory working of the systems. In the first place, the refuelling of the coal fire in an open grate is always intermittent, which means that the heat output is never uniform, and satisfactory ventilation can only be obtained by constant opening and closing of windows or doors, thereby sacrificing a proportion of the heat.

With proper supervision of the boiler in the radiator system, a constant temperature of fluid circulating in the system is ensured. Any desired temperature can therefore be maintained in the rooms by merely adjusting the setting of the radiator valves, and this, in conjunction with a definite amount of window opening for ventilation purposes, will tend to maintain approximately constant conditions. Radiators are sometimes used to assist natural ventilation and a device of this nature is illustrated by the diagram in Figure 1. Air enters through a grating in the wall behind the radiator and passes into the enclosed space at the bottom of the radiator. Here it comes into intimate contact with the various sections of the radiator, is warmed, and passes into the room in the form of a warm ventilating current of fresh air. The amount of outside air admitted is controlled by dampness and in some forms of the apparatus provision is made for partial recirculation. Experimental results from an ideal apparatus of this type show that as much as forty-five per cent. of the heat emitted from the radiator has been carried off by the air convection current.

The control of the warm air furnace is similar to the radiator system in needing proper supervision of the furnace itself. The amount of heated air entering the room through the register can be controlled by a damper, thereby affording the maintenance of constant conditions.

The electric heater being, in the majority of cases, a pure radiant heater, it should be placed at such a distance from the objective as to supply the correct degree of heat. This can be done quite easily with the movable electric radiator, but the panel heater, definitely fixed in position, requires control over the amount of heat radiating from the panel. One method of obtaining this control is by using two different qualities of resistance wire, with a three-way switch, to produce three degrees of heat. The thermostat provides another control which is automatic in operation, switching the panel heater off and on in sympathy with the air temperature as it rises and falls. To a certain extent the situation is paradoxical in that radiant heat has no effect on air. However, it is fairly simple to deduce the sequence of events as this control operates. The rays of radiant heat emitted from the heating panel which do not impinge on occupants of the room are partly reflected by and partly absorbed by the floors, furniture, etc. The amount of reflected heat is probably very small, but the warming of the furniture, etc., must gradually warm the air by convection currents. The

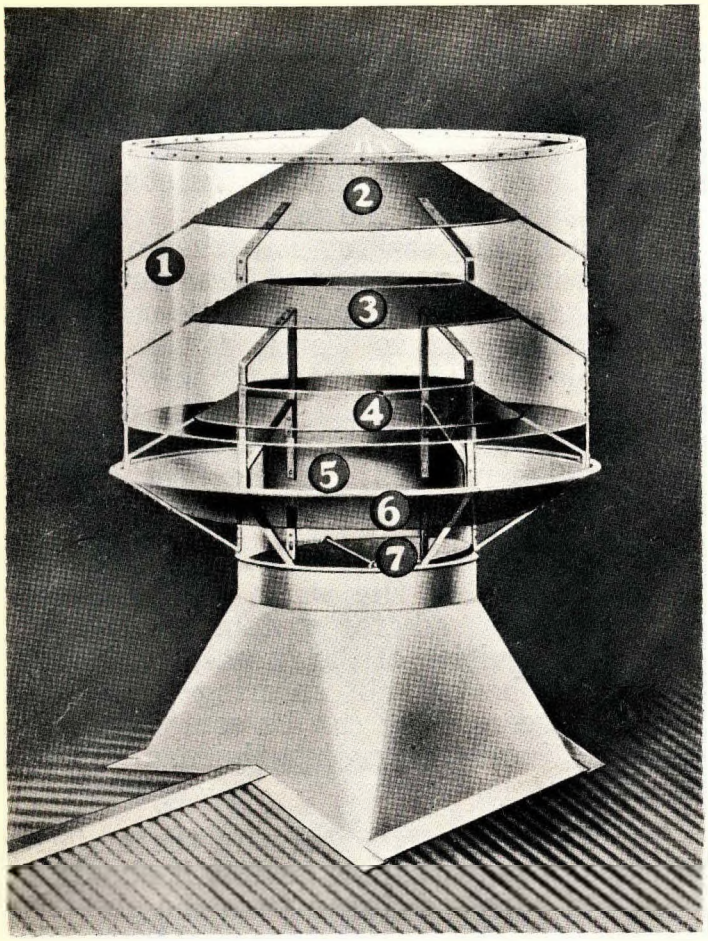


Fig. 2. The Robertson Ventilator

1. Suction Band
2. Cap
3. Louvre Ring
4. Stack Louvre
5. Stack
6. Wind Baffle
7. Damper (if specified)

thermostatic control is therefore the result of air convection currents set up by a secondary heating effect. Scientifically it is correct that a radiant heat effect is only required when the air temperature is less than normal in order to balance the excess loss of heat from the body. Therefore as the air temperature gradually increases, so less and less radiant heat is required. The control exercised by the thermostat is therefore correct in principle, but the utilisation of a secondary heating effect, with its consequent heat losses, to raise the air temperature, seems to make the claim of these panels for high efficiency appear to be somewhat overestimated. The ideal location for these thermostats gives rise to a certain amount of thought and in actual installations the position they occupy are many and varied, but from general considerations two points seem definite ; the thermostats should be located in the zone of occupancy and they should be insulated from the rays of radiant heat.

Ventilating Systems.

There are a considerable number of aids to natural ventilation which are not connected in any way with heating systems, the fittings being attachable to windows, walls or ceilings. Perhaps the best of them is the Robertson Ventilator, as illustrated in Figure 2, which is made in a number of standard sizes and types suitable for fixing to the roof of any building. The natural upward movement of air in a vertical ventilating duct is known as stack action and is caused by the tendency of warm air to rise. The Robertson Ventilator is a scientific extension of this natural principle

obtained by designing a head for this ventilating duct, which will utilise the kinetic energy of passing winds in any direction to create a suction which will assist the stack action and cause a positive ventilating current of air. In common with all other aids to natural ventilation, however, the absence of any natural movement of air means the absence of ventilation. For this reason, mechanical systems of ventilation, which give a positive movement of air under all conditions, have been developed to either remove the vitiated air or to force in pure air and thus displace the foul air. The former method, sometimes called the Vacuum System, is used mainly in warehouses where material of all descriptions is stored, and ample ventilation is required to prevent deterioration. The latter method, which, incidentally, almost always incorporates the former as well, is the more important and can be used in one of two forms, the Split System or the Hot Blast System. In the first of these, designed mainly to operate in countries where the winter conditions are severe, properly conditioned air is supplied to the building at the correct temperature for human requirements and any heat losses through the walls, etc., are made up by a separate heating installation. The latter system, which for the majority of cases is a misnomer, is entirely selfcontained in that all heat losses are balanced by the heat contained in the entering air, which, having dissipated this heat, drops to the correct effective temperature. Care must be taken that the temperature of the incoming air in the Hot Blast system is not raised above approximately 130 degree Fahrenheit, otherwise it is liable to become burnt and develop a disagreeable smell.

Air distribution in the building.

In addition to controlling the condition of the ventilating air, a vital point is the delivery to the rooms themselves, since although at no point do we wish to produce a draught, yet on the other hand any possibility of stagnant corners should be guarded against. There are three systems available, usually defined by the direction of air movement, viz., upwards, downwards and horizontal. Advantages have been claimed for all three systems and in particular cases each may give satisfaction. Actually the whole question revolves round the fact that the tendency of warm air is to rise and the debatable point is whether the circulation of air should assist or oppose this tendency. To a certain extent the efficiency of air distribution depends upon having the minimum number of air inlets and outlets and yet prevent air stagnation anywhere. It has been found by experiments that draughts are caused more by inlets than outlets, since inlets tend more to shoot a jet of air into the room, whereas outlets tend to suck the air from all directions. In addition, if a number of inlets were placed at or near the floor of the building, there would be a tendency to form a number of columns of warm air moving vertically upwards, which would somewhat defeat the object of attaining an entirely uniform air temperature. On the other hand, a downwards system possesses the advantage that by forcing the air in at the ceiling, it will tend to gradually drop downwards in the form of a blanket, this movement being opposed by both its natural tendency to rise and the heat given off by the occupants of the room. For winter conditions, therefore, the downwards system is ideal insofar that a uniform movement of warm air is ensured. For summer conditions, where cooled air is delivered to the building, the downwards system is not so successful in producing uniform temperature conditions, as the natural movement of cooled air is downwards and this is interfered with by the upward movement of the heated air produced in the zone of occupancy, so that partially uncontrolled air movement takes place. The horizontal system can be quite satisfactory, provided that the air travel is not too far and a partial downwards movement is encouraged by fixing the inlets above the zone of occupancy and the outlets reasonably near the floor level. In the majority of cases, inlets fixed in the walls of a room simply consist of gratings, but when attached to the ceilings for the downwards system, summer conditions necessitate a distribution as uniform as possible. This diffusion effect is usually obtained by using some type of deflector over the inlet which harmonises with the architectural treatment and can be used with a semi-direct lighting effect, as illustrated by Figure 3.

Fig. 3. Types of air diffusers for ceiling inlets.

Ideal air conditioning plant for split system or hot blast system.

The function of an air conditioning plant is threefold ; in the first place the temperature of the air must be controlled, secondly the water content must be maintained at a definite value and lastly the air must be purified as much as possible. To attain these objects, the essentials of the conditioning plant should be an air washer, in the form of a spray chamber through which the air must pass, and some form of heating unit. The humidity control, as mentioned in the previous article, is based on the principle that air at different temperatures possesses the property of absorbing different quantities of water vapour. Assuming that air is required to be supplied with a relative humidity of 50 per cent. at 70 degrees Fahrenheit, we find from a chart or table that the water content of the air should be 54 grains per pound of dry air. We can also determine that saturated air at 51 degrees Fahrenheit also contains 54 grains of moisture per pound of dry air, which means that the temperature of the water in the spray chamber should be maintained at 51 degrees Fahrenheit. If the sprays are suitably designed, the air passing out of the chamber will be absolutely humid at within 2 degrees of the required temperature of 51 degrees Fahrenheit. The action of the heating coil will then raise the temperature to 70 degrees Fahrenheit and the relative humidity will naturally drop to 50 per cent. Figure 4 shows diagrammatically the main features of an air conditioning plant for humidifying natural atmospheric air. The first point to note is the inclusion of a tempering coil. This is necessary for use when the outside air temperature drops very low, that is, below freezing point, and the water in the spray chamber would have to raise the temperature of the air considerably in order to humidify it. The tempering coil raises the temperature of the incoming air to within a few degrees of the spray water temperature. The tempering and heating coils may consist of low pressure steam coils or hot water coils or radiators of the aerofin type or electric heating coils. A large amount of dirt and impurities in the air is washed out in the spray chamber and still more is removed by the eliminator plates, in passing through which the air frequently changes direction and impinges on a wet surface to which the particles of dust stick. Strictly speaking, the real function of the eliminator plates is to prevent suspended moisture passing out of the spray chamber with the air, and what actually happens is that water and a small proportion of dirt is deposited on the plates. A disadvantage of washing the dirt out of the air is that it has to be removed afterwards from the water, and for this reason viscous filters are sometimes used. These filters are built up of a number of units, suitable for easy removal, in each of which are contained metal shavings. The air, in passing through the filter, is forced to make a number of changes in direction, causing impingement against surfaces which have been coated with oil and to which the particles of dirt and dust adhere. The removal of the dirt when required is facilitated by a number of special baths for their treatment. It is comparatively easy to follow that the operation of the conditioning plant is almost the same both

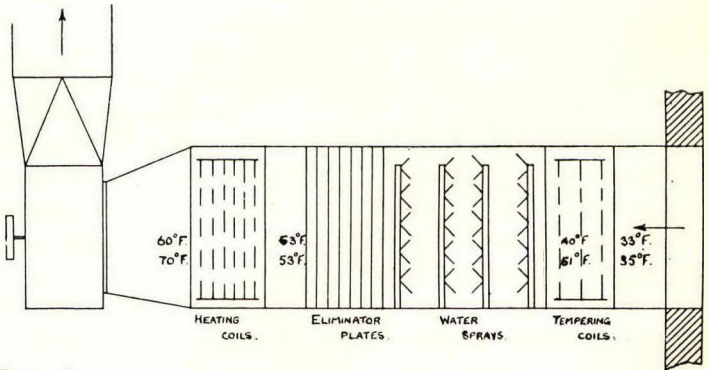


Fig. 4.

Diagram of humidifying plant with representative wet and dry bulb temperatures

winter and summer. During the winter, some form of heat is required for the heating coils, for raising the temperature of the spray chamber water and possibly for supplying the tempering coils. During the summer, heat is required for the heating coils, and refrigeration is needed for the spray chamber water.

Economical operation of the ideal air conditioning plant.

There are one or two points which have greatly improved the operation of these plants from an economical point of view. The first of these is the possibility of recirculating a considerable portion of used air with a minimum of twenty-five per cent. of fresh atmospheric air. Another, just as important, is the fact that every occupant of the building is discharging four hundred British Thermal Units of heat per hour in addition to a minute quantity of water vapour. A smaller consideration still is the heat emitted from the lights when it is necessary for them to be used.

During winter conditions, one of the methods of operation is to pass the recirculated air with the atmospheric air through the spray chamber to give the necessary vapour content and then past the heating coils, to raise the temperature sufficiently for comfort and to balance the heat losses from the building. If the heat output of the occupants balances the heat losses from the building, then the air will be supplied to the building at the correct temperature for comfort, i.e., approximately 70 degrees Fahrenheit. Finally, if the heat output of the occupants is in excess of the heat losses from the building, then less heat is required from the heating coils and air at a lower temperature still will be supplied.

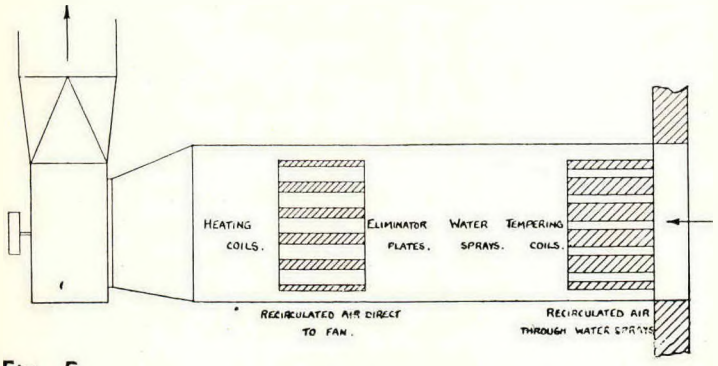


Fig. 5.

Diagram of dehumidifying plant showing shutters for control of recirculated air.

During summer conditions, that is, when the atmospheric air temperature is greater than approximately 70 degrees Fahrenheit, then the heat filtering into the building and the heat and water vapour emitted by the occupants must be removed in some way or other. This is done by the process of dehumidification, or, in other words, by passing the air through the spray chamber, in which the water is maintained at such a temperature as not only to cool the air, but also to force it to deposit moisture. It can be easily understood that by mixing the dehumidified air with the exhaust air from the building, a mixture will be obtained which will have a mean temperature and water vapour content. Figure 5 shows the main features of the plant, which functions as follows :— the recirculated air is split up into two portions, one of which passes through the water sprays with the 25 per cent. of atmospheric air and, while absolutely humid at a low temperature, mixes with the other portion of the recirculated air. The division of the recirculated air is effected by means of dampers controlled by thermostats, adjusted so that if the temperature of the incoming air is too low, then a larger amount of recirculated air is short-circuited direct to the fan.

In practice, it is often the case that a much larger proportion of the recirculated air passes through the dehumidifying sprays than is short-circuited direct to the fan. In addition, particularly in the case of theatres and bioscopes, pure atmospheric air can be passed through the sprays and delivered to the building in a saturated condition at a low temperature. The heat input into the building (mainly from the occupants) is then sufficient to raise the temperature to come within the required comfort zone. It should be noticed, however, that this can only be done with the downwards system of distribution.

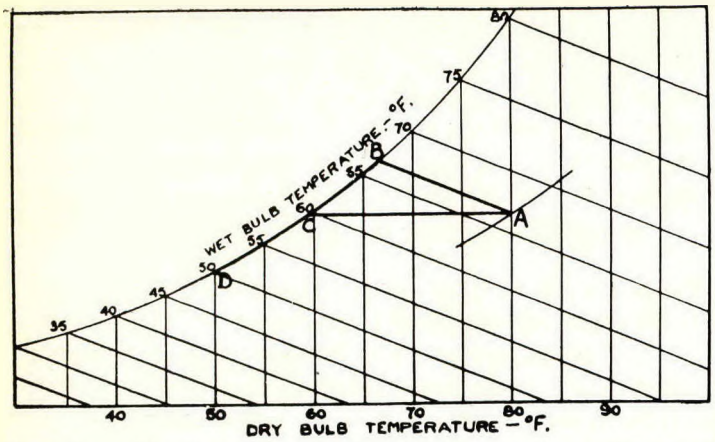


Fig. 1 Psychrometric chart illustrating cooling and dehumidifying.

An actual example of this in Johannesburg just recently is as follows :—

Temperature of outside atmosphere, 80 degrees Fahrenheit.

Relative humidity of outside atmosphere, 44 per cent.

Temperature of water in spray chamber, 54 degrees Fahrenheit.

Temperature of air passing out of spray chamber and delivered to theatre, 56 degrees Fahrenheit.

Relative humidity of air passing out of spray chamber and delivered to theatre, 100 per cent.

Temperature of air in zone of occupancy in theatre, 73 degrees Fahrenheit.

Relative humidity of air in zone of occupancy in theatre, 60 per cent.

Air conditioning plant with limited temperature and humidity control.

Another type of air conditioning plant tends to be more economical by the omission of any control over the temperature of the water in the spray chamber, i.e., no heating during the winter and no refrigerating during the summer. In this case, the spray chamber is used, if required, as a humidifier in winter and as a humidifier and cooler in summer. It is therefore only satisfactory up to a point, since neither the temperature nor the humidity control is absolute. Yet as it definitely improves atmospheric conditions in a large number of cases, it must prove to be an asset to health.

The working of the plant is usually automatic, in that for summer conditions, in most cases, there is no recirculation and atmospheric air is supplied for ventilation purposes. If the temperature is unduly high, a thermostat causes the water sprays to turn on in the spray chamber, thus cooling the air before it is supplied to the building. It is imperative that the difference between this cooling effect and the previously mentioned dehumidification is thoroughly understood. Referring to the psychrometric chart in Figure 6, the point A represents an atmospheric air condition of 80 degrees Fahrenheit with 50 per cent. relative humidity, corresponding to a wet bulb temperature of 67 degrees Fahrenheit. When passing this air through a water spray in which the water temperature is less than 67 degrees Fahrenheit, depending upon the humidifying efficiency of the sprays, the tendency will be for the air condition to follow the wet bulb temperature line of 67 degrees, i.e., the line AB, its limiting position being the point B on the saturation line. The heat lost by the air as the dry bulb temperature falls is utilised in vaporising water from the sprays, which thus increases the moisture content and therefore the relative humidity. Unless an inexhaustible source of water is available, no dehumidifying effect is likely to occur, as, in the ordinary course of events, with a limited quantity of water circulating through the sprays, the abstraction of the latent heat necessary to cause dehumidification would soon raise the water temperature. In delivering this air to the building, it is obvious that a much more satisfactory cooling effect would be obtained by using the upwards rather than the downwards system of distribution. With the limited cooling effect, the disadvantage of the latter system is that by the time the air reaches the zone of occupancy, the temperature would have increased again.

In the original case, with artificial cooling, the water in the spray chamber is maintained at a low temperature, say 50 degrees Fahren-

heit, and the dehumidifying effect is represented on the chart by the line ACB or possibly ABCD. In this case dehumidification is possible because the latent heat of the water vapour, which is given to the sprays during its condensation, is continually being abstracted by the refrigerating unit.

For the winter control of this economical conditioning plant, thermostats may control the temperature of the air if electric heating coils are used, whereas manual control will be necessary if hot water or steam heating is used. Some control over humidity is obtained by the use of a humidity control or hygrostat, which operates sprays when the humidity of the air is too low, and thus raises the moisture content.

Application of the two mechanical systems of conditioned air.

We now come to a consideration of which system of ventilation is advisable for various types of buildings, the Split system or the Hot Blast system. The main point of interest here is that once a room exceeds a certain size, direct heating in any form is no longer satisfactory, so that with few exceptions it is only in the buildings with small rooms that there is any real choice. The other important item is a knowledge of the cooling effect of a window in winter, particularly in those parts of the world which suffer from extremes of temperature, and the prevention of this cooling effect becoming excessive. Once these two items have been considered, then each case must be treated on its merits and general rules only can be given. For buildings consisting of a large number of fairly small rooms, such as blocks of offices and flats and schools, etc., the Split system is usually more desirable ; whereas for theatres, bioscopes, concert halls, lecture halls, gymnasiums, etc., the hot blast system is generally the more satisfactory. In no place in South Africa does the temperature in winter consistently drop below freezing point, which means that only in exceptional circumstances would the Split system be required for any type. It is important to note that efficient operation of either system cannot be expected if isolated windows are left open and thus interfere with the calculated movement of air.

Amount of conditioning required for various localities.

Another interesting consideration is the effect of different localities on the conditioning plant required and the amount of air conditioning required in various parts of South Africa. The climate of South Africa is mainly divisible into two types, that at the coast having an average humidity which is rather high, with temperatures varying according to the position on the coastline and the inland climate, which has extremes of temperature with an almost uniform low humidity. The cooling effect of a water spray on air with a high humidity is only a matter of a few degrees and produces a negligible effect, therefore for the coastal towns satisfactory air conditioning will only be obtained by using the scientific air conditioning plant and dehumidifying during the summer. The conditioning of the inland air almost always entails an increase of humidity, together with either an increase or decrease of temperature. It we study the psychrometric chart in Figure 6, it is obvious that with the economical conditioning plant, hot air, having a low humidity, can be very effectively cooled with a water spray, e.g., air at 88 degrees Fahrenheit and 40 per cent. relative humidity can be cooled so that it is saturated at 70 degrees Fahrenheit. This means that for inland towns the economical conditioning plant will be found satisfactory for most climatic conditions, whereas the scientific plant will maintain ideal conditions under all circumstances.

Small air conditioning units.

It is now possible to obtain small air conditioning units of suitable capacities to deal with the ventilating air for single or a small number of rooms in factories, laboratories, offices and residences. They are available in a number of different forms, such as heaters, humidifiers, dehumidifiers, etc., and can be used with electricity, gas, hot water or steam as the heating medium. As illustrated by Figure 7, for home use the unit is con-

tained in an attractive cabinet, which harmonises with the surroundings of the room in which it is placed. Undoubtedly the time is now rapidly approaching when air conditioning will be considered indispensable and the modern residence will naturally be designed to incorporate one of these units.

With any type of residence in South Africa the hot blast system should prove satisfactory, the temperature of the air supplied to the rooms depending on the temperature of the outside air. The air distribution through the rooms should combine the downwards and horizontal methods, the inlets being as near the ceiling as convenient and the outlets just above floor level. The outlets should be at least one more in number than the inlets and every outlet and inlet should have an adjustable damper in order to obtain uniform air motion. The diagrams in Figure 8 represent the air motion which can be obtained, depending upon whether the air flows or is injected into the room through the inlet. The unit itself should be located as centrally as possible in some convenient alcove.

Conclusion.

This article would be incomplete without mentioning the great benefit to health which accompanies the installation of a scientific heating and ventilating plant, particularly in tropical and sub-tropical countries. The main benefit derived is undoubtedly one of bodily comfort, which by relieving the body of the strain of abnormal conditions, encourages industry in all indoor occupations. An equally important benefit, although probably not equally appreciated, is an increase in the body's resistance to absorb disease germs, which is the direct result of a humid atmosphere. Under this latter benefit should be included the common cold, which doctors now admit is contagious and cannot be prevented. However, since we know this disease is the result of undue strain on the heat-regulating mechanism of the human body, the logic seems obvious, that if there is no strain then no cold can result. Therefore with the general adoption of air conditioning, one can expect a diminution of colds, sore throats, etc., and a rise in general health of the population.

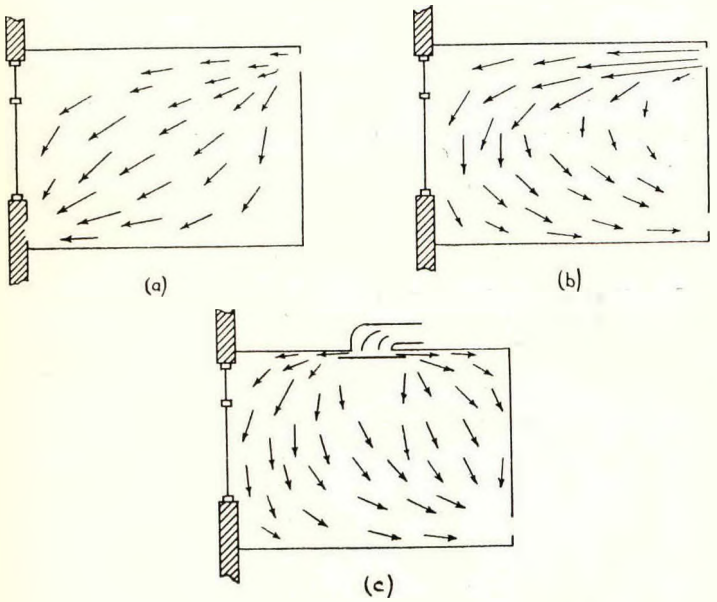


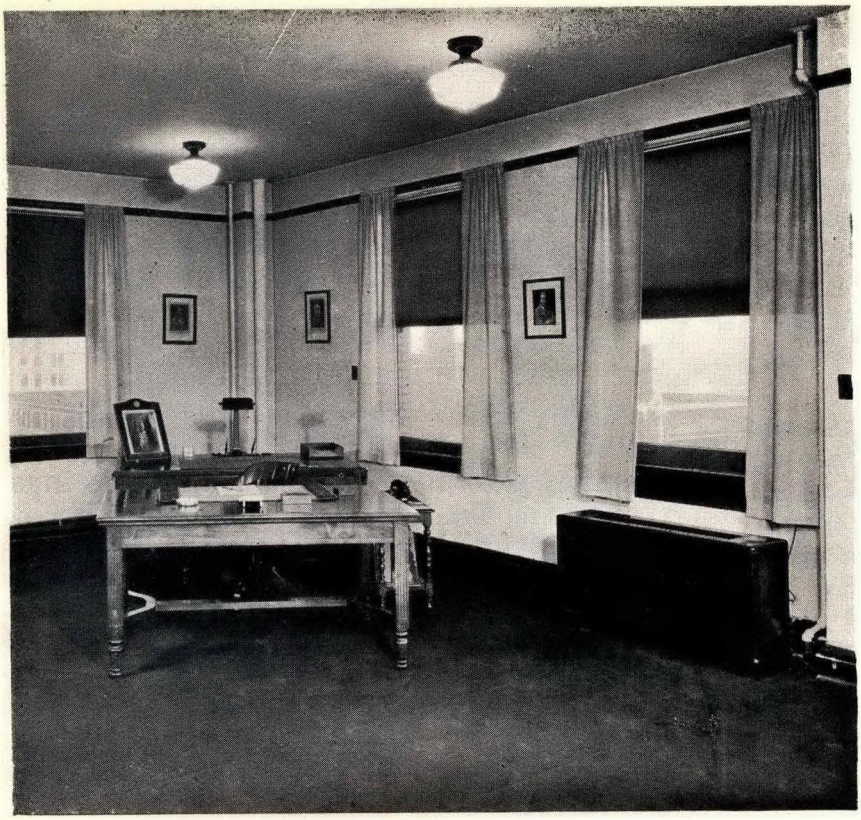
Fig. 8.

Air distribution in rooms with various methods of introduction.

(a) Slow velocity introduction suitable for opposite inlets

(b) moderate velocity injection applicable when inlets and outlets on inside wall.

(c) Slow velocity diffusion with ceiling inlet.



Interior of an office showing air conditioning unit under window.

(By courtesy of Carrier S.A. (Pty.), Ltd.)

CORRESPONDENCE

Our (?) Journal

The main criticism which can be directed against the "South African Architectural Record" is that it does not appear to be published for the benefit of architects ! We have had, it is true, occasional articles on Town Planning, and "modernism," and so on ; and as special treats reproductions of winning designs in competitions, usually reproduced too late, or too badly, to be of any use. But, generally speaking, we are doomed to travel accounts, or obstruse articles on painting or sculpture, having very little, if any, bearing on architecture. Take for example, the December issue. This contains an effusion covering no less than fifteen pages on "this ' Modern ' Sculpture." (Might I suggest in passing that the inverted commas should have been above the word "Sculpture" rather than "Modern").

I consider this to be positively iniquitous. Apart from the fact that the sculpture illustrated was obviously not "sculpture," but rather an infantile form of modelling or carving (in only two cases could the writer discern what the alleged works of art were supposed to represent), it is absolutely wrong in principle that the major portion of the pages of a journal supposed to be devoted to the art of the building should in practice be given over to an essay discussing the puerilities of contemporary "modern" "sculptors."

I quite appreciate the difficulty experienced in obtaining suitable material. But those fifteen pages could easily have been filled in with matters more interesting to the profession. For instance, instead of pictures of sculptural monstrosities, we could have had pictures of modern buildings (no reflection intended here on "modern buildings"), or say

an article–illustrated–on new houses ; or on the work of the younger architects ; or the modernist school in South Africa ; or the planning of flats ; anything architectural in fact.

I could suggest numerous subjects which could be written about. Here are a few possible titles "Modern Flat Planning," "Modern Office Planning," "Contemporary Modern Buildings," "Modern Cinemas," "Government Architecture," "The Planning of the South African House," "The Use of Modern Materials," and so on.

I should like to see important matters affecting the welfare of the profession threshed out in the pages of the journal : for example as to why and how two or three firms are obtaining the cream of the work in this town ; why only certain firms seem to be favoured with provincial work, to the exclusion of all others ; why our competitions are invariably so badly run and badly assessed ; why certain salaried members are allowed to do outside work ; why architectural students are competing with practicing architects ; why there is so much cut-throat fee cutting ; and much more of similar import. Everybody knows what is going on, yet no remedial measures are taken. Instead, the Journal, which should be the voice, and the forum, of the profession, ostrich-like sticks its head in the sands, and ruminates on the alleged beauties of alleged modern sculpture and painting ; on excavations on Rome ; on travel-talks ; on the Hermes of Praxiteles, on palaeolithic mesolithic culture ; and heaven knows what else.

Even advertisements, or lists of tenders, or excerpts from the local drainage bye-laws would be preferable, and more profitable than these.

The editors complain that they cannot obtain articles and photographs. "For two years or more," they state, "attempts had been made to obtain plans and photographs of Johannesburg's new railway station"—unsuccessfully.

It may be of interest to readers to learn that more than two years ago I submitted an article and diagrams of the new station, on which I had spent considerable time and trouble.

The article was rejected—on the ground that it was too trenchant and outspoken and might hurt somebody's feelings—I was advised to take it to one of the local dailies, which I did ; and the article was eventually published in a mutilated form. Again, I wrote, quite recently, a letter to the journal criticising the activities of certain students conducting private practices of their own. This was also refused publication on the grounds that the Central Council had the matter under consideration.

I merely wish to say this. That if it be the policy of the journal not to print anything which may possibly injure someone's feelings, or which the Central Council or any other of the Councils or Committees may be deliberating on at the time ; then it is not surprising if it fails to find suitable material for publication ; or that architects have not sufficient faith or interest in the journal to justify their expending any time or trouble on it.

● L. Grinker.

The Editors,

"South African Architectural Record."

Dear Sirs,

It appears from the editorial of the December issue of the "Record" that there is dissatisfaction with the general policy of the editors.

This seems quite unjustified. As art editor of a University publication I cannot but admire the high standard maintained by the "South African Architectural Record." To my mind it compares favourably in content, typography and illustration with any similar oversea journal.

It is gratifying to see articles of wider import than those of a purely routine nature, for these articles on the allied arts must ultimately colour the outlook of the profession.

To the keen student of current architecture the articles on French and German architecture should invariably prove stimulating. To criticise the inclusion of "foreign" work is a narrow and short sighted policy which probably derives from an incomplete conception of the problems of architecture.

Yours faithfully,

Alan F. Wilson

The Building By-Laws of the Municipality of Johannesburg have been amended as follows :—

(1) By the deletion of the words "No solid parapets shall be used on balcony floors on or above second floor level" in the first paragraph of Section 111 and the substitution therefor of the following :—

No solid parapets shall be used on balcony floors on or above second floor level of building, except where the projection of the balcony does not exceed three feet from the building line and the total length of the balcony or balconies does not exceed one-third of the total length of the frontage in which such balcony or balconies are situated, in which case solid parapets will be allowed, and if there are bay windows on the same storey they must be included in the one-third of the building frontage. Dividing walls across balconies over public streets shall not be allowed except in cases where solid parapets are permitted under the provisions of this by-law, in which case such dividing walls shall shall not exceed nine inches in thickness.

(2) By the deletion of the last paragraph of Section 111 and the substitution therefor of the following new paragraph :—

Nothing in these by-laws shall prohibit the erection and use of a party column common to two adjoining verandahs, whether such column stand partly on the extended boundary line of two properties or adjoin the same ; nor in the case of adjoining verandahs shall it be prohibited to place any column upon a plinth, provided that this be necessary for alignment and that all other provisions of these by-laws are observed.

●

Mr. Dudley S. Mann, F.S.I., M.C.Q.S., is commencing in practice as a Quantity Surveyor from 1st March at African Board Building, 104, Commissioner Street, Johannesburg, and at 23/24, Connaught Building, St. Andries Street, Pretoria.

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Messrs. R. A. Barnett, Dip. Arch. (W.W.) ; D. S. Haddon, A.R.I.B.A. ; J. N. Cowin, A.R.I.B.A. ; and C. E. Todd, Dip. Arch (W.W.), have been registered as members of the Institute.

Capt. W. C. von Berg, M.C., has been elected a Fellow of the Royal Institute of British Architects.

●

The Sixteenth Annual Exhibition of pictures and objects or Art and Crafts will be held in the Selborne Hall, Johannesburg, from Monday, the 29th April, to Saturday, the 11th May, 1935, both dates inclusive.

Entry Forms may be obtained on application to the Hon. Secretary, 67, Exploration Building, Johannesburg.

●

The Eighth Ordinary Annual General Meeting of members of the Transvaal Provincial Institute will be held in the Council Chamber, Kelvin House, 100, Fox Street, Johannesburg, on Tuesday the 12th March, 1935.

The meeting will be opened at 1.30 p.m. and after the appointment of Scrutineers to conduct the ballot, will be adjourned until 5 p.m. for the continuance of the Ordinary business.

●

A classified index to advertisers is now published monthly in addition to the alphabetical list.

It is the intention of the Committee that this Journal shall definitely become a reference book for the profession in respect to the various manufacturers, merchants, craftsmen and sub-contractors connected with the building trade.

In view of the increased building activity it is felt that such a reference book will be of inestimable value to the profession and will at the same time augment the Journal's income and enable the editors to make it more attractive by the addition of photographs, sketches, drawings and other matters of interest to members.

When calling for tenders in the future, members are, therefore, earnestly requested to refer to the Journal and thereby stimulate the movement.

Registered Students in Architecture or Quantity Surveying attending the University of the Witwatersrand are entitled to a copy of the Institute's Year Book. The 1934-1935 edition is now available, and Johannesburg Students are advised to call for a copy thereof at the office of the Registrar of the Institute, 99-100, Stanley House, Commissioner Street, Johannesburg.

●

Pretoria Students should call for their copies of the Year Book at the office of Mr. T. Moore, Quantity Surveyor, 31/36, Connaught Buildings, St. Andries Street, Pretoria.

●

Building in Springs

The Springs Town Council is maintaining strict supervision of the quality of buildings erected in the municipal area.

About a dozen alleged jerry builders have been eliminated from the district ; one house, which was already occupied has been demolished ; and three other houses, ready for occupation, have been partly taken down and are to be rebuilt.

A large number of unqualified builders came to Springs in the hope of reaping a harvest from the building boom, but the Council, about a year ago, appointed two building inspectors, who have taken care that the by-laws are not infringed. Each new building is inspected periodically during its construction.

"The position generally is no worse to-day than usual," said Mr. C. M. McComb, the town engineer of Springs, to the Springs representative of "The Star." "In fact, it has improved slightly. There is a definite improvement in the class of building being constructed. In the past few months about a dozen jerry builders have been eliminated.

" There is no room for jerry builders in Springs. The one house which we ordered to be demolished was actually completed and occupied. The construction was so inferior that the department could not possibly pass it. Before a house can be occupied we have to issue a completion certificate. In this case the house was occupied without the necessary certificate.

"At the moment we have more than two dozen builders in Springs, but there is a constant stream of unqualified men on whom we have to keep a strict eye."

The Mayor of Springs, Mr. George Sutter, M.P.C., in his last mayoral minute, commented on the class of building being constructed in the town and said : "The Council has adopted a very strict attitude in regard to the quality of buildings being erected in the area. It is hoped that the public will realise that, although this attitude will mean a slight incease in the cost of building, it is definitely in their own interests in the long run. Builders in the habit of constructing an inferior type of work need not look to Springs as a field for their operations as building by-laws are being enforced to the hilt and this attitude must very materially assist in making Springs a more desirable place to live in."

From the "Star."

●

An Architect's Fees.

A dispute over an architect's fees was the subject of a civil case which continued on 12th November, before Mr. Harding Barlow in the Johannesburg Magistrate's Court.

J. Shaw, an architect, claimed £200 from Herman Dembo, of Exploration Buildings. According to Shaw's declaration, Dembo entered into a verbal agreement with him that he should prepare preliminary sketches, plans, drawings and prints for the construction of a building. No remuneration was agreed upon.

Shaw, the declaration proceeded, prepared these. He contended that £313 16s. was a fair and reasonable remuneration. He reduced the claim to £200 to bring it within the jurisdiction of the Magistrate's Court.

Dembo denied all these allegations. In an alternative plea he stated that, in an agreement entered into between Shaw, L. Goldberg and himself, it was agreed that Shaw should prepare plans and sketches on certain terms and conditions on behalf of a private limited liability company to be incorporated to buy certain stands in Yeoville and erect flats, provided that sufficient money could be raised on the mortgage of the property.

Dembo said it was agreed that if sufficient money was not raised, or if the scheme was not proceeded with, Shaw would make no charge.

The money necessary to proceed with the scheme was not raised and no building was erected. Dembo maintained that he was not indebted to Shaw.

Mr. L. Kane Berman, of Messrs. Taitz and Kane Berman, appeared for Shaw ; and Mr. I. A. Maisels, instructed by Mr. N. Werksman, for Dembo.

Shaw gave his evidence in chief at a previous hearing.

Under cross-examination yesterday, Shaw said it was only after he had prepared the plans that he heard that a company was to be formed.

J. D. Roos, a quantity surveyor and a partner in the firm of Roos and Roos, explained that Shaw asked his firm about the beginning of the year to prepare rough estimates. They estimated approximately £11,000.

Soon after the estimate had been prepared Shaw asked the firm to prepare a bill of quantities, stating that his principal was Mr. H. Dembo. No charge was made for the approximate estimates. The bills of quantities were prepared from Shaw's plans and all the preliminary documents were headed "H. Dembo." Just before the completed draft bill was put into type, a letter signed by Dembo was received from Shaw. It stated that a company known as Garth Buildings (Pty.), Ltd., was to be formed, and that all correspondence should be directed straight to Dembo. The draft bill was then altered to the name of Garth Buildings (Pty.), Ltd., but the preliminary work remained in Dembo's name.

Roos and Roos never received any instructions from Dembo, the more usual practice being for a quantity surveyor to be appointed by the architect.

Roos confirmed Shaw's evidence that an offer by Dembo of £300 in settlement of the fees of both Shaw, and Roos and Roos was refused.

Before closing his case, Mr. Kane Berman said he had agreed with the defendant's attorney that it would not be necessary to call the Registrar of Companies to prove that Dembo had registered no company to proceed with the building schemes.

Dembo, in evidence, said he was a director of companies. About December, 1933, he became interested, with a Mr. Goldberg, in a building proposition in Yeoville, and interviewed Messrs. Cook and Cowin, a firm of architects. Cook and Cowin prepared plans, specifications and an estimate.

The first time that Shaw had anything to do with the matter was when Dembo asked him to look at the plans. Shaw asked how it was that he had not got the work. Dembo replied that he had been approached by Goldberg to form a limited liability company and take over the ground which Mrs. Goldberg held. He was not the only one to decide whether they should take the work away from Cook and give it to Shaw, he added. Shaw pleaded with Dembo to use his influence with Goldberg and a man named Birk to give him the work. Goldberg and Birk were present. Dembo told Shaw he had made a condition with Cook that, if the work was not proceeded with, he would not be paid. Shaw agreed immediately to a similar condition. He also agreed that, if he were paid at least £100 in cash, he would take the balance of his fees in shares in the company to be formed.

It was agreed that Shaw should be appointed architect, and that after the company had been registered he should receive £100 and the balance in shares.

Shaw knew that they could not proceed with the building unless they could get a loan from a building society.

They were unable to get a large enough loan to carry out the building scheme, and Shaw knew this. The building was not proceeded with. Dembo took steps to reserve the name of Garth Buildings (Pty.), Ltd., for the company, which, however, was not registered.

Dembo and Goldberg were still trying, on behalf of the syndicate to be formed to raise sufficient money to proceed with the scheme. When an offer of £300 was made in settlement of the fees, Dembo continued, he did not intend to be personally responsible for that amount. The offer was made on behalf of a Mr. E. Friedman, who was negotiating for the purchase of the scheme.

Cross-examined by Mr. Kane Berman, Dembo said it was on Shaw's suggestion that it was agreed to abandon the scheme of building on four stands, and to build on two. Originally Shaw gave an estimate of approximately £8,500.

The hearing was adjourned until 13th November.

(Rand Daily Mail)

A dispute over an architect's fees came to an end on Friday in the Johannesburg Magistrate's Court, when John Shaw, a Johannesburg architect, was awarded £200 and costs by Mr. Harding Barlow, the defendant being Herman Dembo, of Exploration Buildings.

According to the declaration, Dembo entered into a verbal agreement with Shaw that the latter should prepare certain plans for a proposed block of flats in Yeoville. No remuneration was agreed upon. The plans were duly prepared.

It was contended that £313 16s. was a fair and reasonable remuneration, but the claim was reduced to £200 to bring it within the jurisdiction of the Magistrate's Court.

Dembo denied all the allegations and in an alternative plea he stated that in an agreement entered into between Shaw, L. Goldberg and himself it was agreed that Shaw prepare plans and sketches on certain terms and conditions, on behalf of a private limited liability company, to be incorporated to buy certain stands in Yeoville and erect flats thereon.

This was provided sufficient money could be raised on the mortgage of the property.

The defendant alleged that it was agreed that if sufficient money was not raised, or if the scheme was not proceeded with, Shaw would make no charge. Eventually the money necessary to proceed with the scheme was not raised, and no building was erected.

In an exhaustive judgment, Mr. Barlow said that he found that the evidence for the plaintiff was entirely acceptable. On the legal issues he came to the conclusion that as Section 71 of the Companies Act had never been complied with, the defence on the legal issue fell away.

Judgment was entered for the plaintiff, as stated.

Mr. L. Kane Berman (of Messrs. Taitz and Berman) appeared for the plaintiff; and Advocate I. A. Maisels (instructed by Mr. N. Werksman) for the defendant.

(Sunday Times)

Architects : Stucke & Harrison, Johannesburg.