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SOUTH AFRICAN ARCHITECTURAL RECORD

THE JOURNAL OF THE CAPE, NATAL, ORANGE FREE STATE AND TRANSVAAL PROVINCIAL INSTITUTES OF SOUTH AFRICAN ARCHITECTS AND THE CHAPTER OF SOUTH AFRICAN QUANTITY SURVEYORS

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AMSTERDAM HOUSE, DURBAN

AMSTERDAM HOUSE, DURBAN

A BUILDING COMPRISING SHOP, SHOWROOMS AND OFFICES ON AN EXTREMELY NARROW SITE SITUATED IN THE HEART OF THE SHOPPING CENTRE OF DURBAN

S. N. TOMKIN AND PARTNERS, ARCHITECTS

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SITE:

The site is extremely narrow being 25 ft. in width x 150 ft. in depth. Of the 25 ft. width some 14" is taken up by an existing party wall on the west boundary. The site is located in one of the busiest points in the heart of Durban's shopping centre of West Street. The nature of the ground in this area does not make the construction of the Basement an economical element due to the low bearing capacity of the soil which is heavily waterlogged. However, the extremely high cost of the site warranted, in the opinion of the owners, the inclusion of a Basement in the Plan Requirements, as well as the construction of nine additional floors beyond their own requirements of the Shop. It was also the owners' wish that Showrooms should be provided on the first and second floors for the use of individual tenants, as in their opinion, the location of the site would warrant reasonably high rental for such floor space. The portions of the Showroom facing West Street had to be provided with display windows. Seven typical floors of Offices provided for the accommodation of the maximum of 4 tenants per floor, and, some floors are in fact thus occupied, although the majority of floors are rented by two tenants and in some instances by one only.

The requirements laid down for the Shop and Basement which were the main reason for the construction of the building were:

a) Large window display off the street.

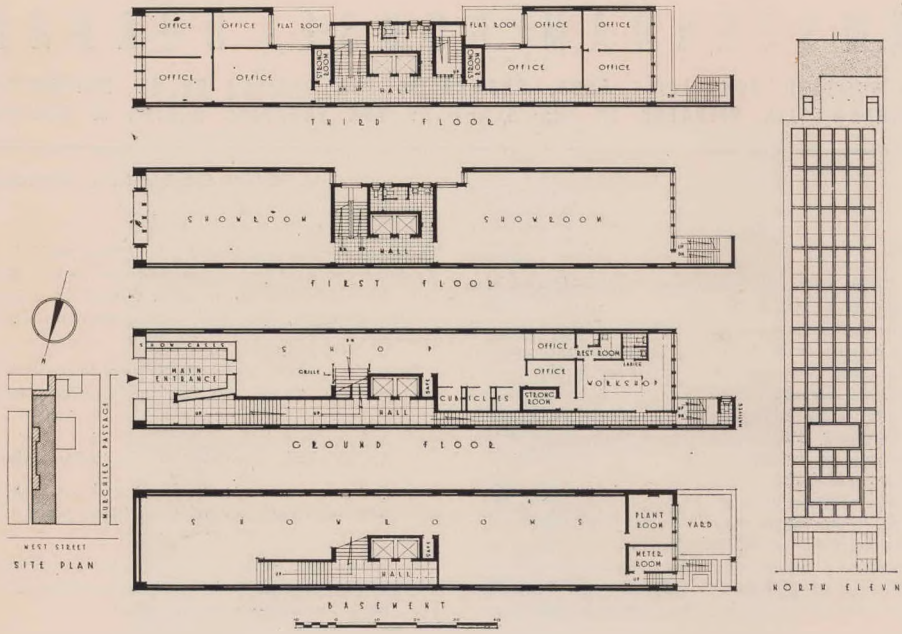
b) A suitable background for the sale of expensive jewellery.

c) As large an area as possible for the display and sale of large items such as travel goods, sports goods, and china and glassware sets.

d) Both the Shop and Basement were to be air-conditioned including the small Jeweller's Workshop situated at the rear of the building on the ground floor.



THE MAIN ENTRANCE



SOLUTION:

The arrangement of the street showcase and the Entrance to the building above, as well as the location of the lifts, are a direct result of the owners' plan requirements. This arrangement resulted in the maximum showcase space, while the position of the lifts on plan created the opportunity of letting each floor to two separate tenants, each of these sections being capable of a further subdivision if necessary. The northern aspect of the West Street elevation resulted in the general elevational treatment of deeply recessed windows to limit as much as possible the penetration of the hot summer sun.

CONSTRUCTION:

The building is constructed of reinforced concrete frame standing on a concrete raft with a series of small friction piles below. The West Street elevation is finished in precast terrazzo slabs, while steel window frames run from floor to floor each with a lower panel filled in with Plymax, the aluminium face of which has been painted.

The existence of these narrow sites in Durban has recently been the subject of discussion in the City Council. It is their wish to prevent building on sites of this width as it is the opinion of the City Engineer that such sites cannot be satisfactorily handled architecturally. The owners in the case of this building made considerable efforts to join forces with the owners of small stands adjoining their own, in order that a building of greater width could be constructed. Protracted negotiations, during which the owners offered to make considerable financial sacrifice in order to achieve this end, finally ended in deadlock and the owners were forced to proceed with the building as it now stands.



HOUSE IN WESTVILLE, DURBAN, FOR THE ARCHITECT

R. C. C. BENNETT, M.I.A., ARCHITECT

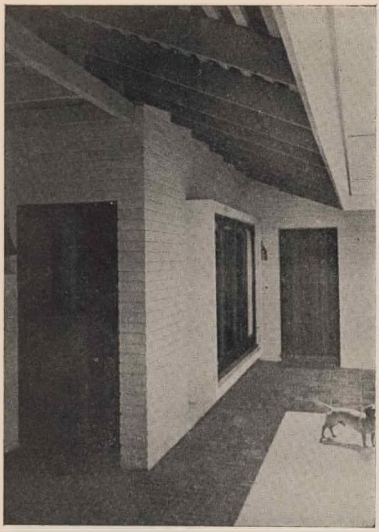
The site of this house is at Westville some miles inland from Durban in the attractively varied topography of the rising land behind the city. It is half an acre in extent and enjoys an almost rural setting. Situated on the spur of a hill with the ground falling away on three sides, it overlooks the Palmiet River and the sea in the distance beyond.

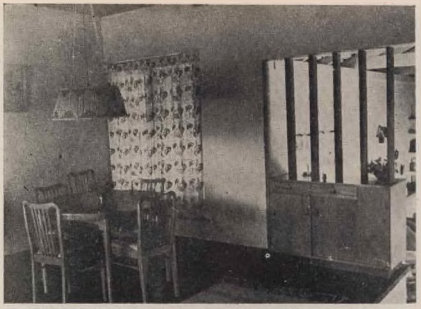
The plan is designed to provide an effective but informal home, of maximum economy, for an architect and his wife, coupled with the desire to take full advantage of the generous views and the opportunities of informal living which the sub-tropical climate permits. A further factor was the necessity for providing for both privacy and weather protection from the South-West.

The plan is arranged in three wings — service, sleeping and living. The living and sleeping accommodation is orientated North-East in order to gain the maximum benefit of winter sun and the greatest protection from the hot summer sun. Fenestration has been kept to a minimum on the South-West compatible with good lighting and ventilation. The living room itself has been arranged on a lower level thereby zoning it away from the normal working circulation of the house

THE LIVING ROOM



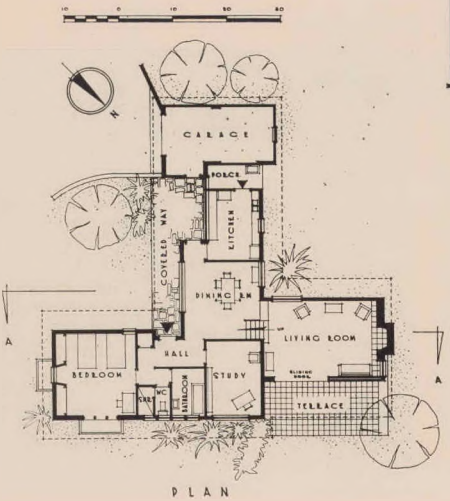




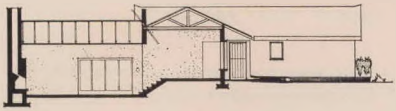


ABOVE: View towards main entrance door showing the stable door leading to kitchen and dining room at left.

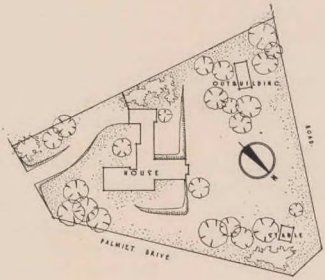
RIGHT: Two views showing the dining room with the living room at lower level beyond.



PLAN



SECTION AA



SITE PLAN

Conventional brick supporting wall construction has been used, supporting a Shingle roof with wide eaves overhanging. As a protection against termite infestation, all concrete surface beds are carried over foundation walls on a filling treated with pentachloraphenol.

The entrance is surfaced with brick paving, 12in. quarry tiles are used to floor the living room, dining room and verandahs. Cork tiles are used in the bedrooms and "Battleship" Linoleum in the kitchen.

All joinery is in Californian Redwood, with the exception of the South African Pine panelling in the entrance, the Yellow Wood cocktail and dining room fitting, between the dining and living rooms, and the 3in. Pine board ceiling to the dining room.

The roof space over the living room has no ceiling, while the bedrooms are finished with insulating board.

The internal walls of the living room and the dining room are bagged, the remainder being plastered. The former are finished "off-white" with a maximum use being made of colour in the furnishings, comprising native woven rugs, curtains, lamp fittings, etc.

The architect's comments, having lived in the house, are that he feels that his original objectives have been achieved.

On the score of economy, the house cost £2,600 in 1947, and in respect of privacy from neighbours, the maximum enjoyment of the views and in the provision of cool living conditions in the tarrid Natal summer, the house has proved successful.



The hall seen from the dining room.



The living room terrace.

THE STUDY AND INTERPRETATION OF REGULATIONS 1-28 OF THE FACTORIES, MACHINERY AND BUILDING WORK ACT 22 OF 1941

FIRST PART

BY C. L. PEAGHAM

The substance of this paper was originally delivered as an address to the Institution of Certificated Engineers at Kelvin House, Johannesburg, and was published in the Proceedings of that Institution. In view of the obvious interest which the matters dealt with hold for Architects, the Institution kindly acceded to the request for permission to reproduce this paper. We are also indebted to Mr. Peagham, who has substantially re-written the paper in order to cover those matters which are of particular concern to the Architect.

INTRODUCTION

It is my hope that the study and interpretation given here will play a useful part in making known and understood the aims and objects of the Factories Act and its administration, and in securing a closer liaison between the executive officers whose responsibility it is to apply the regulations and you gentlemen whose co-operation is needed for success in their efforts.

Surprisingly enough it has been found necessary to point out to some people the favourable influence that good conditions of hygiene and welfare have on the life and health of the worker and to insist that efforts be made towards the most extensive application of such measures where it is a question of protecting workers against hazards.

It must be remembered that though the provision of hygienic working conditions may seem costly, it represents nevertheless, in the words of employers themselves "an expense that pays good dividends."

In the more advanced industrial countries legislative measures have been issued which in their entirety correspond to the demands of hygiene and welfare in all modern establishments. This paper then will enumerate and explain those measures regulated by our own legislation, which from a hygienic point of view it is advisable to adopt with regard to the construction and running of a factory.

Whilst a study of the regulations does not normally present many difficulties, their interpretation is quite another matter, particularly if the legal aspect is also to be considered. The present paper, however, is confined to the study and interpretation of specific regulations from the point of view of their practical application in the field of industry from day to day and represents my personal opinion on the subject.

The registration and control of factory premises is intimately bound up with the regulations through the two words "suitable and unsuitable" and which form the basis of all inspection work. In order then to understand or appreciate more fully what lies behind an inspector's requirements and why he interprets the regulations in the way he does, we must for a moment refer to Section 16 of the Act which reads as follows:

"In considering the suitability of any premises for use as a factory under Sections 12, 13 and 15, an inspector may have regard to any factor which in his opinion is relevant, including all matters relating to the site of the factory, the adjacent or surrounding premises, the manner in which the factory is or is likely to be equipped or in which the business is or is likely to be conducted and the health and safety of the workers."

From this, one can see that whenever an inspector is applying or interpreting the regulations he is always considering them in relation to the duties and responsibility placed upon him by this section which is anything but narrow in its scope.

* * *

These regulations were made and published in terms of Section 51 of the Factories Act in Government Notices 1195 of 28th August, 1941 and 1227 of 4th September, 1941, and apply throughout the Union of South Africa to all factory premises as defined in Section 3 of the Act.

The first notice deals with Regulations 1-12 and the first thing the notice did was to rescind the regulations made under Section 42 of Factories Act 1918.

Regulation 1 consists, as usual, of the definitions, the main point of which is that the name and address of the office administering the Act and Regulations is given.

Regulation 2 is of interest to many people, particularly architects, builders, engineers and Town Engineers. It lays down important details in respect of the drawing of plans which are required to be submitted for scrutiny and approval in terms of the Act.

The actual procedure in regard to the submission of plans is carefully set out in Sections 12, 13 and 15 and applies to all building work including new work, alterations or additions, temporary or otherwise, in respect of all factory premises, whether proposed, existing, registered or unregistered.

The main points that concern us at this stage are that all plans must be submitted and approved before work is commenced and in this connection the onus of submitting plans to the inspector is on the Local Authority and not the individual, when such Local Authority has by-laws which require the submission of plans.

The details required on the plan are to enable the inspector to study and scrutinize the plan in relation to the specific requirements contained in the regulations, with special regard to the purposes for which application is made.

It is a first essential that the plans must be accurately drawn in ink to the scales laid down — most people are not the artists they imagine they are and freehand drawings in pencil or ink leave much to be desired, and the office boy's efforts with ruler and pencil are hardly commendable, though at times most mysterious.

Engineers' drawings are not always very helpful either, and when plans are sent from overseas for the erection of building showing every nut and bolt and covering the paper with hieroglyphics considerable time and effort is wasted in deciphering the plan and finding out just what it all boils down to.

The scales as laid down do not normally present any difficulties, but if they do, an application to the inspector for the use of other scales will usually overcome this.

Secondly it is most necessary that all plans clearly indicate room sizes, sizes of windows, doors and other openings and show any special means of ventilation. They must also show the use to which each room is to be put and in buildings more than one storey in height each floor must be shown separately, together with the arrangements of sanitary conveniences, stairs and fire escapes. It is necessary to indicate whether the rooms are ceiled or not and what type of roof is to be provided.

The reason for requiring some of these details may at first seem obscure, but when one understands the later regulations relating to such matters as distribution of light, effectiveness of means of ventilation, plan of escape in case of fire and the special regulations for certain types of factories and processes, it is easy to see that the merits of any proposed building work cannot be satisfactorily assessed in all fairness to occupiers and workers unless the foregoing information is clearly and readily available.

Before leaving the question of plans, there are two further points. The first is the question of the site or block plan which must be included in the general plan. This must give some indication of the surrounding conditions and if possible, adjacent buildings, their height and usage. The second point is in relation mainly to plans involving alterations and/or additions. Municipalities demand certain colouring to indicate specific features, but the Department deals as a rule with prints only and it is often difficult and sometimes impossible to distinguish new work from old. On this point, therefore, those concerned are requested to ensure that such *plans unmistakably indicate what is existing and what is proposed.*

FEES TO BE PAID

The question of the payment of fees is dealt with by this regulation and is a fairly straightforward matter. However there are one or two points that may need clarifying.

Plans fees are a minimum of £2 for any plan whether for alterations involving no additional floor area or for additions or new buildings less than 2,000 sq. ft. in area. It is only for every *complete* additional 1,000 sq. ft. over the first 2,000 sq. ft. that an additional £1 must be paid.

Regulation 4 As in all good legislation there is a right of appeal and this regulation merely tells you that you must state your case clearly and fully. Such an appeal, by the way, must be lodged within 14 days of the receipt of the requirements or decision of the inspector against which the appeal is being made.

ANNEXURES (Prescribed Record Methods and Forms).

In regard to the different annexures no difficulty should be experienced in completing the necessary forms but from experience in dealing with them it seems that a few points need to be emphasised or clarified.

Annexure F1, which is an application for approval of plans is the only form that has to be completed in duplicate. As far as the details called for are concerned there are two points I want to draw attention to, firstly if the plans in question are for additions or alterations the figures of persons to be employed should be those concerned with the additions or alterations only and not the total factory staff.

Secondly the nature of the industry should be clearly inserted and it helps a lot if the name and *address* of the owner is given.

STRUCTURAL REQUIREMENTS

We now come to the practical side of the regulations, the regulations which lead to so much of the differences of opinion between people like you and people like me and my aim in interpreting these regulations will amongst other things, be to endeavour to elucidate and apply a reasonable meaning to those undefined words or phrases in the regulations such as 'suitable', 'adequate', 'satisfactory' and last but by no means least, 'the opinion of the inspector'.

Before tackling the specific regulations there are some general observations I would like to make at this stage and to again direct your attention to that Section of the Act which indicates to the inspector the lines on which he must apply his consideration of the suitability of factory premises.

The preparation of this paper has involved a considerable amount of research work to check up on the standards worked to or recommended by various research and other authorities and to seek answers to a number of questions to which such a close and detailed study of the regulations has given rise. I find it necessary therefore to discuss such subjects as factory planning, design and layout, ventilation, lighting and welfare at some length and in some detail in an endeavour to fulfil the objects of this paper and to try to clear the fog which seems to have shrouded those aspects of the regulations in their daily application and interpretation.

The Act and its regulations are applicable to every conceivable type of industry and activity and it is necessary for an inspector, in order to recognise accident or health hazards, to know the industry he is inspecting, its various processes and something of how the same job is done elsewhere. Not only is this necessary in order that he may know how an accident can happen but also that, in recommending measures for prevention, he does not set up another hazard or call for some change which is altogether impractical. The chief contrast so far as accidents and occupational diseases or illnesses are concerned, is that the cause of accidents are more clearly evident as the process is observed while the causes of occupational diseases are very much less so. It requires knowledge of the composition of the raw materials used, their chemical reactions, and their by-products, as well as the finished product turned out, the amount of the materials used, the duration of exposure of the worker and the conditions of work inside the premises. There have been instances where, with all this knowledge, the only clue that there was a health hazard associated with a particular process was the fact that workers did not stay long on the job. The labour turn-over was excessive considering the wages paid and the fact that the work was relatively easy.

Much of the information required may be made available to the inspector through the channels mentioned in the discussion of the previous regulation if the points mentioned by me in regard to proper plans and completion of form are given the attention asked for. A good deal may also be accomplished in discussion with people like yourselves, who may have personal experience in one or other of the various types of plants indicated and your co-operation in getting results is essential. Convincing occupiers of the benefits of the measures recommended for control of hazards or improvement of conditions is so often discouraging: sometimes because with the long hidden effects of certain conditions cases sometimes continue to develop after corrective measures have been applied and the management will feel that the measures recommended are not effective.

* * *

It seems to me that one of the things that has not received sufficient and thoroughly competent technical consideration on anything like a wide scale in this country is the design, layout and planning of industrial buildings. Certainly it has not received anything like the attention devoted to the development of industrial processes.

Many of the trends and examples in industrial design that were developed overseas have been and are being tried here and whilst some of them may for particular circumstances meet a specific requirement or need, others demonstrate very clearly that their suitability, however eminent and proven for overseas conditions, by no means ensures their proving satisfactory under the entirely different conditions of climate and classes of labour encountered in this country.

Experience has indicated very definitely that factories can with advantage, be designed to meet and suit the needs of both process and worker. Collaboration and close co-operation between architects, engineers and those concerned with production is necessary to design and erect factories with full regard to the fact that it is the people who will have to work in them who will in the long run, mean the difference between success and failure.

If the significance of the differences of the climatic conditions in various parts of South Africa are fully realised by those concerned with the planning and development of our industries real and substantial saving in capital outlay and running costs will be achieved. Excellent opportunities are offered by the natural advantages of our climate for developing to a much greater extent the use of natural light and ventilation as well as contributing in other ways to the health, welfare and efficiency of workers.

Regulation 13: Floor Space and Ventilation.

This regulation lays down minimum requirements for any workroom which must be assured before such room can be regarded as a suitable place in which people may be required or permitted to work.

Sub-regulations 1-4 are all related in a way but there are specific points in each which require separate consideration, let us then examine 1(a) and (b) which deal with the question of minimum height of workrooms and floor area per occupant.

Height: In the majority of standard codes a fixed minimum limit of height is given with a view to preventing the construction of unduly low workrooms. For this reason there has been adopted a height of 10 feet. It constitutes a dimension which satisfies the psychological needs of the worker whose welfare and contentment during working hours are to a large extent dependent on the free space by which he is surrounded and except on grounds of technical necessity exceptions to this rule should not be permitted.

Area: Like the height of workrooms the surface also presents an aspect of particular importance. Thus where workers are obliged to execute their work at working posts situated opposite or adjacent to each other a certain separation reduces the danger of transmission of infectious diseases. On the other hand, as in the case of height, the psychic factor enters into consideration and the impression of liberty of movement experienced by the worker when provided with sufficient space contributes to his contentment, especially where it is a case of work being carried on under relatively trying conditions from other points of view, e.g. gallery and mezzanine floors, attic or penthouse sections etc.

The figure of 25 square feet per person which incidentally should be free space i.e. exclusive of areas taken up by plant etc. may be considered as a reasonable and satisfactory minimum. Taken together the minimum height and floor area

ensure a volume of 250 cub. ft. per worker in any room, so providing what is regarded as an adequate initial cubic content of air for each occupant and setting a standard towards the prevention of overcrowding.

In dealing with the sub-regulations regarding ventilation I propose grouping them separately under two main headings (1) General Ventilation and (2) Local Ventilation.

Under this heading we shall be dealing with everything the regulations mention in regard to general ventilation, air movement, air-cooling and heating :— this is what they say about them.

(a) *(Adequate) means of* ventilation shall be provided .

(b) *if an inspector so requires* (in other words if in his opinion necessary) *adequate means* of air-cooling or of creating air movement shall be installed and maintained in good condition.

(c) (Regulation 23) *If an inspector so directs* (again if in his opinion necessary) *Suitable* heating appliances shall be installed.

You will notice that there is a distinction of onus in respect of the requirement under (a) as compared with (b) and (c). In the two latter instances the occupier need do nothing at all if he does not personally think it necessary until the inspector expresses his opinion and requires or directs him to do so whereas in the case of (a) the onus is on the occupier to ensure that each workroom is adequately ventilated, the inspector only afterwards assesses the adequacy of the ventilation. He has also of course, to assess the adequacy of the means of air-cooling and of creating air-movement and the suitability of the heating appliances, but only after first requiring the occupier to install them.

In these four cases then we have everything which as I previously mentioned, gives rise to argument — the opinion of the inspector, adequacy and suitability — and it is necessary that a close study be made of the technical and other details involved in order that one may appreciate the grounds on which such opinion is based and how an answer to the defining of adequate, suitable and satisfactory is arrived at.

For many years now these very aspects of atmospheric condition and control have been investigated and tested by experts like Bedford, Vernon, Leonard Hill, Yaglou, Haldane and others with a view to ascertaining and establishing the most comfortable and satisfactory conditions for workers in all types of industries and processes for their maximum safety and well-being and much of what is said in this paper on all subjects of working conditions is derived from their experience, findings and recommendations.

VENTILATION

The temperature and other atmospheric conditions of the surroundings in which an individual lives or works exerts a very definite influence on the functions of that individual. These functional changes vary according to different atmospheric conditions but to establish the point at which these influences begin to manifest themselves is not easy, for they are closely associated with other factors and in particular with sharp variations of temperature especially as related to the degree of humidity and movement of air.

Ventilation can thus be accepted as essentially a technical subject having for its object not only provision for the renewal of air in workrooms but also for rendering atmospheric conditions in them as perfect as possible.

The problem is to effect on the one hand the removal of vitiated air arising either from occupation or the carrying on of industrial processes in workrooms, and on the other, to replace the air removed by fresh air so that the atmospheric conditions will conform to requirements of chemical purity, temperature, humidity and movement.

It is well known that fatigue increases the liability to accident and the influence of temperature on the incidence of accidents amongst the different age groups is presumably a reflection of the fatiguing effect of severe work done at high temperatures. In hot weather in this country or during visits to the tropics most of us have probably experienced some difficulty in performing exacting tasks, mental or physical, and it is fairly certain that one's inclination for effort tends to diminish in hot environments. Other studies of industrial fatigue have shown that under difficult conditions, whether of hours of labour, arrangements of shifts, atmospheric conditions or even illumination, the most competent workers show less fatigue than their fellows.

Good or adequate ventilation is a relative term and changes as our standards of living change, the old theory about increased carbon dioxide and decreased oxygen for physiological discomfort have been disproved. However, lack of ventilation may result in air conditions which are offensive and conducive to a feeling of lassitude. To alleviate these conditions in occupied spaces, fresh air must be introduced in sufficient quantity to reduce or improve the concentration of objectionable substances or conditions to a satisfactory level.

The total quantity of fresh air to be supplied is governed primarily by physical considerations and the physical requirements controlling temperature. Air distribution and air velocity usually predominate. Other factors include type and use of the building, locality, climate, extent of occupancy and the air supply system.

In regard to this question of quantity of fresh air there exist differences of opinion even in expert circles as to what constitutes a desirable rate of air change.

The figure of 3—6 changes per hour is generally put forward as a reasonable average and Dr. Bourdillon in a recent Medical Research Council report mentions four air changes per hour as being the minimal fresh air supply which was likely, in the absence of good circulation of filtrated air, to be of any use in reducing the bacterial content of the air. Dr. Bedford

of the Ministry of Labour, Great Britain, thinks that if one had to rely on the supply of fresh air as the sole means of removing organisms from the air of places where people are congregated such as factories and offices, less than four changes of air was not of much use and for preference it should be distinctly higher.

A point often raised in computing air changes is that of the height of any room which must be taken into account. The opinion seems to be that for lofty rooms of say 25 feet height and over anything above 12—14 feet should not be taken into account but if the room is a little over ten feet in height then the total volume should be included in the calculation.

Another point is density of population and distribution of occupancy in very large areas. If one is dealing with a factory with large machines or plant, wide open spaces and very few people even four changes an hour might be excessive. Or if in a similar building all work was located around the walls adjacent to air inlets and the centre portions were used for storage and movement it would be unreasonable perhaps to provide four air changes or try and create suitable air movement over the whole area. In such cases probably a standard based on the supply per person would be distinctly better, as a rule, this ranges from 20 to 50 c.f.m. per person.

A further point in this connection that is sometimes brought forward is the question of local exhaust ventilation and its relationship to general ventilation. In some factory sections various machines are used each requiring exhaust ventilation and excellent general ventilation may be assured merely by providing a balanced series of air inlets to admit fresh air. In such cases any additional air changes would be superfluous.

Before leaving the question of air changes there are one or two facts about it that are perhaps worth mentioning. Air changes, their meaning and results produced are not clearly understood even in technical circles and when talking of air changes it is difficult to convince some architects and engineers that even 60 changes per hour is nothing formidable and in certain cases not enough, 6 air changes per hour is looked upon as a normal standard rate, 10 changes as a fair rate, 30 per hour a high rate and 60 changes per hour as a miniature hurricane, but I know of a section in Johannesburg where, because of the nature of the articles dealt with, an efficient local extraction scheme is not possible, and a general ventilation scheme providing a minimum of 120 changes per hour is installed and operating very successfully. Far from there being a hurricane in the workroom concerned the balance of supply and extraction is so well arranged that a satisfactory and comfortable air movement results and there appears to be at least 90% extraction of the process contaminant.

* * *

The question of air-cooling is one presenting difficulties equal to those of the adequacy of the means of ventilation. It is neither practicable nor desirable in this instance to lay down fixed maximum standards of temperature but rather to work on the basis of outside shade temperature and fix the maximum by which it may be exceeded inside any given factory. This figure of temperature difference may range from 3° to as much as 10°F. depending on the construction of the building and the nature of the process being carried on inside. The fixing of a maximum wet bulb-temperature of a range 72°—75°F. should also receive serious consideration in this respect.

A still atmosphere is depressing even though the temperature and humidity are comfortable and some movement of air is not only desirable but definitely necessary. It is commonly known that it is more exhilarating out in the open and this is entirely due to the air movement which always obtains in natural surroundings.

It should be stressed that air-movement and air change are two different concepts. Apart from the removal of heated air, the rate of air-change in naturally ventilated buildings does not contribute to comfort, it is the rate at which air moves past the body in any and all directions which is important, for it determines the rate of evaporation of sweat and with it, the sense of cooling which contributes very greatly to summer comfort. This is particularly true for the more damp atmospheres such as on the lowveld or at the coast.

High velocities of air for ventilation purposes are commonly called draughts and must be at all times avoided. The points of entry or air inlets must be numerous and carefully selected and arranged and it may be desirable in some instances that nowhere in the building shall the occupants be in the direct path of the incoming air but rather that they occupy space reached by the fresh air when most of its momentum has been lost.

The same factors have to be considered in the matter of air movement when minimum and maximum velocities may be required for various types of occupancy. The aspects of building and construction, process, temperature, humidity and air-movement must all be considered together carefully in assessing the adequacy of any proposed means of ventilation or air conditioning. Quite often the lining of a roof or the provision of a ceiling of suitable insulating material will so improve conditions as to obviate the need for any special means of ventilation or conditioning, and, as in every aspect of internal factory conditions, the inspector judges the adequacy of or the need for suitable means of ventilation on the results produced by such means, consideration should be given to all alternatives before selecting or deciding on specific means.

The question as to whether natural or mechanical means are to be employed to ensure the desired atmospheric conditions within a room or building is also a question to be decided by the inspector.

Very often natural means of ventilation are quite adequate but they are often unsatisfactory also, not so much perhaps

because they cannot produce the desired results but because the means at hand are either inadequate or neglected.

Failure may be due to change of wind direction and force or to the fact that there is little or no wind and it is not possible to alter inlet openings to suit.

In built up areas or with buildings of different heights, turbulances and downdraughts or air are created which can and do nullify any extraction.

Temperature difference schemes may fail because of faulty opening arrangements (short circuiting) and because during summer in this country, outside temperature in some areas exceeds inside temperature.

To obtain maximum results the arrangement, location and control of the openings should be such that the two forces act co-operatively rather than in opposition. Air, like everything else on earth, resists movement, and when it is moving takes the path of least resistance.

The effectiveness of natural means of ventilation depends to a great extent upon the distance between openings i.e. width of the building. In a wide building or room or one with openings on one side only the outside air will be unable to penetrate the full width of the room and stuffiness will be felt in the inner areas even though the people near the air inlets may complain of draughts.

A point frequently lost sight of by those who ought to know better is that internal partitions even when only to door height will obstruct and prevent the effective movement of air. Another error not uncommon in planning is the placing of a range of offices or lavatories or other ancillary sections along the greater part of the outside wall thereby preventing windows from being used for ventilation of the working area.

A further point is that very often large areas of glass in walls are made fixed instead of openable and inlet ventilation openings are placed high up instead of low down. High level openings in sawtooth roofs or along roof apices are not capable of themselves of creating sufficient air movement in the zone of occupancy (working level). Such outlet ventilation is of little value unless adequate inlet ventilation area is provided at a low level. The area required will vary with climatic conditions and the type of occupancy.

In regard to air inlets I would like to say something about the conventional inlet and that is the window.

To-day the window used in industrial buildings practically to the exclusion of all other types is the Standard Steel design Frankly I wish architects and others concerned would press for something better. The S.S. window whatever its virtues (mainly economic I do believe) is certainly not an efficient air inlet unit.

Because of its horizontal pivoting its efficiency depends very largely on the prevailing wind blowing at 90° to the wall in which it is fixed and then in anything like a decent breeze it is so draughty near the window that those in the vicinity close it and of course it is then no longer an air inlet. It is impossible for this type of window to utilise effectively any air movement moving parallel to the wall in which it is fixed and it has normally no mechanism to enable one to adjust the angle of opening so that better use could be made of air moving towards it between 0° and 90°.

Further disadvantages of the S.S. type window are :

(a) The openable area is usually less than the air-inlet area required for the room or building in which they are installed.

(b) It is very often extremely difficult to burglar-proof and always costly in comparison with other types.

(c) When fully open i.e. when the openable section is parallel with the floor the projections may present a hazard

(d) If not within easy reach opening it frequently is a problem. The cord provided has just broken or will be replaced sometime.

The desirable type of window that should be installed in all occupied buildings is one that can usefully and readily take advantage of any wind direction without disturbing the occupants or process inside the area it covers.

Such a window is already made by window manufacturers. I refer to casement and hopper type windows. The design should incorporate three sections, each side one being a full casement and the centre fixed except for a two foot hopper section at the bottom.

SPECIAL MEANS OF INFLUENCING NATURAL VENTILATION

1. ROOF VENTILATION

To refer to the pipe or stack ventilator, to-day this takes the form of a patent or static ventilator designated to assist stack action by utilising outside air movement.

These ventilators are made in a variety of types and some of them are actually openings in roof ridges with some method of preventing the ingress of rain.

As far as the various sorts of incidental fitting which convert the stack into a proprietary roof ventilator are concerned some of these accessories are for the purpose of preventing rain from entering the ventilator, some are to prevent wind being deflected downwards into the stack and some are used with the idea of deriving a greater effectiveness from the wind. These auxiliary devices are effective in varying degrees but the amount of air they can handle in moderate winds is comparatively low. However, within the limits of their capacities they are extremely useful and their most effective use is to provide adequate venting of the air from roof pockets.

Even in small factories ventilated solely by natural means, the main ventilation of the building is actually provided by cross-ventilation through windows or other openings and roof ventilators are merely auxiliaries to cross-ventilation.

2. ROOF DESIGN

Another method employed to utilise and take advantage of natural ventilation in building is roof design. There we have

various shapes known as saw-tooth section (primarily designed for better natural lighting), lantern louvres or ridges, monitor roofs and ridges, etc. They, like the static ventilator, are also dependent for their action and efficiency upon temperature differences and wind velocity and direction, and, in addition, are influenced by the type, shape and pitch of the roof, i.e., lean-to pitch, hip, mansard, belfast, etc.

Generally speaking they are not very satisfactory and a great deal of back draughting occurs through turbulences and wind direction. The lantern ridge type is about the best and certainly makes, if properly sized, fairly adequate provision for evacuation of heat from hot industry workshops e.g. glass works, blacksmiths shops, melting shops, etc.

Fig. I illustrates the various types of roofs designed for ventilation and indicates some of the wind turbulance that may take place.

In the diagram we see that the wind curves in a downward direction beyond the lee-side of the building, the distance away depending on the wind speed. Any building or portion thereof situated where this downward trend occurs will be subjected to downdraught and will not benefit in regard to cross-ventilation by the outside wind.

In addition the wind creates areas of pressure and suction around a building against which it is blowing and in this case it may considerably augment the air movements through the building depending of course on the location of air-inlets. Fig. II illustrates what is happening in such cases.

It is difficult to draw a definite line where natural ventilation may be said to fail and where mechanical ventilation becomes necessary but broadly speaking natural ventilation may be inadequate where :

1. Width exceeds 80 feet. (Australian State F. Act requires mechanical ventilation in buildings 60 feet and more wide.)
2. The factory is not provided with proper means for cross-ventilation, i.e. openings of adequate size and suitably spaced in opposing walls.
3. Where the factory is split up into departments separated by partitions even if these do not go up to the full height of the room.
4. Where the air of the factory is subjected to a considerable heat gain from sun heat on a poorly insulated roof or from power driven machinery or heat producing processes.
5. In built up areas with buildings of different heights abutting each other and where open space is at a minimum i.e. narow streets and very little yard space.
6. Where it is not possible to alter air inlets and outlets to suit changes of wind direction and force.

In assessing the natural ventilation of a building either on site or on plan consideration should also be given to the following points :—

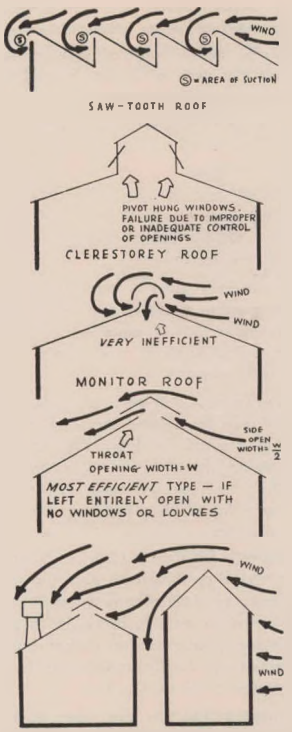


FIGURE I

1. Air inlets to be near floor level and air outlets at roof or ceiling level.
2. Air inlet area should be double that of the outlet area and not less than the following standards :
   (a) Offices: 3 sq. feet per 100 sq. ft.
   (b) Workrooms: Light work 5 — 6 sq. ft. per 100 sq. ft.
   Moderate Heat 6 — 7 sq. ft. per 100 sq. ft.
   Heavy work (much heat) 9 — 11 sq. ft. per 100 sq. ft.
   (c) Humid coastal or lowveld areas 15 sq. ft. per 100 sq. ft.
   and (d) Hot Dry areas 10 sq. ft. per 100 sq ft.
3. Eave openings always improve natural ventilation of unceiled rooms or buildings and should be additional to



FIGURE 2

air-inlets and outlets mentioned above. In regard to foundries air-inlet area should be equal to at least 7½% of the floor area and placed not higher than 8 feet above the floor level.

General ventilation of foundries should provide in the region of 10 c.f.m. for every 100 sq. ft. of active floor space and the inside temperature should be kept within 10°F. of outside shade temperature.

LOCAL EXHAUST VENTILATION

This brings us to sub-regulations 3 and 4 which make provision for special ventilation and other measures for dealing with specific processes.

Considering first the legal aspect we find that the preamble to both of them is the same but there are several points of difference that make it necessary to consider them separately.

Sub-regulation 3 states, inter alia, that if dust, fluff, fumes, smoke or offensive gases arise or are likely to arise the employer, occupier or user *shall* (without the inspector requiring him to do so) install and maintain in good condition hoods, air channels and fans or other adequate means of removing such dust, fluff, etc.

The question of the suitable isolation of such processes in cubicles is a matter for the inspector to decide. Incidentally I find that both Webster's and the Oxford Dictionaries define a cubicle as a small partitioned place for sleeping, reference to the Afrikaans version leaves no doubt on the matter however as the word 'kamertjies', 'small rooms' is used.

Sub-regulation 4 states, inter alia, that if heat or steam arises or is likely to arise, the employer, occupier or user *shall if an inspector so requires* install and maintain in good condition hoods, air-channels and fans or other adequate means of *counteracting the effects* of such heat or steam.

Firstly if an occupier has any process on his premises which gives rise or is likely to give rise to dust, fluff, etc. the onus is on him to provide adequate means to remove it, if he fails to do this he is committing an offence even though an inspector may never have visited his premises or served requirements on him in regard to the removal of the dust, etc.

When it comes to the isolation of any particular dust, fluff or fume producing process there is a reverse of onus and it is the inspector who must require this and the occupier is only committing an offence if he fails to carry out the inspector's requirements.

Similarly with any process giving off heat or steam the onus is first on the inspector to visit the premises and require the installation of special means to deal with it after which the onus is on the occupier to comply with the inspector's requirements. Another difference is that in this case it is mainly a question of counteracting the effects of the heat or steam and the removal of them by extract fan and ducts is not necessarily the answer. Other means can and do include such things as enclosing or screening the process or insulating it whenever possible to conserve the heat and reduce radiation.

Segregation of any hazardous or contaminant producing process must always be placed high on the list as it at once removes the hazard from a position where it may be a danger to many, to another where only a few may be exposed. At the same time in being placed in a separate enclosure or room control either by general or local ventilation is made easier, cheaper and more effective.

The enclosing of processes either wholly or partially by booths or cabinets is better still and is possible with a variety of operations. It prevents the contaminated air from reaching the breathing zone of workers and acts close to the source of contamination. Container filling, sand blasting of small articles,

lead burning and casting in battery manufacturing can all be adequately and satisfactorily dealt with in this manner.

General Ventilation is not always suitable as the principal means of control of the atmosphere for specific processes or classes of work particularly in foundries, except in the case of operations carried on over the entire foundry floor and segregated operations that require infrequent attention. Facilities for it though should include both mechanical and natural means of proper capacity and placement to ensure the removal of contaminated air from the building. General foundry air should not be recirculated.

Local exhaust ventilation is undoubtedly the most important single method of controlling atmospheric contamination whether it be dust, fluff, fumes and sometimes even heat and steam.

HEATING

Although, because of our climate we are more generally concerned with high temperature conditions, on the highveld at least we have also to consider the question of low temperatures. As far as the 'cold industries' are concerned there is no real problem or difficulty as it is generally a case of sufficient protective clothing and remaining as short a time as possible in the particular sections.

On the other hand for general low temperature conditions in workrooms the question of heating is involved.

First, it is very important that people who are more or less sedentarily occupied, and particularly where they are doing fine work demanding dexterity of the hands, should have comfortable conditions in the winter, and speaking broadly we should maintain in winter a temperature for those people somewhere round about 68°/70°. To allow people to carry out such work in a cold atmosphere means that the employer will lose a considerable amount of working time and is likely to get bad quality work: the employee, apart from being uncomfortable, will be subject to chills and other ailments: finally if the employees are working at machines there is considerable risk of accident due to the clumsiness caused by a chilled condition and stiff fingers. I am thinking now particularly of such instances as clothing factories, where girls are sitting at sewing machines, similar operations in boot and shoe factories, engineering machine shops, and so on.

Second, we must remember that, even in the case of people working at hard manual labour, although a comparatively cold condition may be desirable while they are actually performing work, this may be intermittent and there may be frequent pauses when they are sedentary. In such cases, and particularly if the workers are very lightly clothed or stripped to the waist, it is undesirable that they should be in a very cold atmosphere during the sedentary intervals.

Unfortunately, although experience has clearly indicated the need for more adequate heating of factories, it is a fact that in the past, and even to-day, many factories have been inadequately heated by haphazard methods which result in discomfort, inefficient work, high fuel cost and other undesirable conditions.

My own observations have shown that very often heating units are of an unsuitable type and are incorrectly placed. The design of heating installations for industrial buildings should receive more attention.

I do not propose to go into detail on the question of methods of application of various systems of heating because each installation needs to be considered on its own merits. The initial steps necessary to provide an effective heating installation involve the designing or adaptation of the building for the maintenance at a low level of heat losses by various routes.

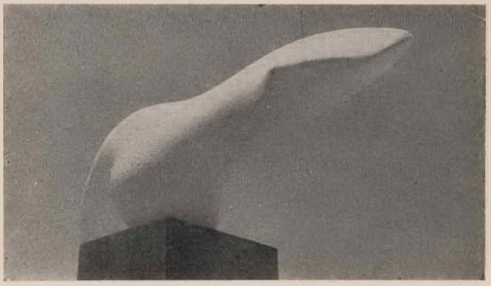
This may mean lining roofs and frame construction walls, possibly with the use of heat insulating material, particularly for the roof. The prevention of leakage of warm air and heat loss through uninsulated floors may also be involved. From the point of view of winter conditions alone it is held by some that in many parts of the country the days on which heating is necessary are few enough to offset the higher cost of heating uninsulated buildings.

The question should be viewed from another angle also, namely our summer conditions. Properly designed insulation that reduces heating costs in winter may play a large part in reducing ventilation costs by keeping temperatures down to an efficient working level in hot weather. I would say as a guide that minimum working temperatures in winter should range from say 50°F. in the case of heavy work, to about 70°F. in the case of sedentary work.

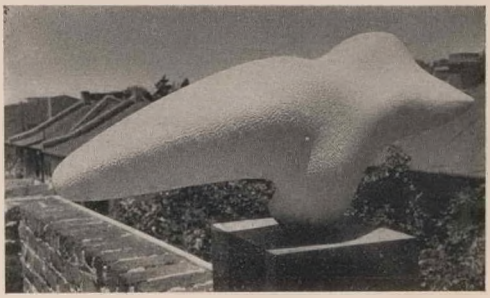


Photo: Leon Levson.

SCULPTURE BY EDOARDO VILLA



For some time Villa has continued to quest for technical precision, simplicity of expression and purity of form. His recent works are free from sentimentality, yet, although stripped of all non-essentials, they are full of meaning. Villa has succeeded in distilling and presenting the essence of his subjects, which nevertheless are always infused with a warm humanity.



ABOVE: Mother and Child. RIGHT: Dynamic Form.

TIME, PLACE & ARCHITECTURE

By H. C. PINFOLD

To one unaccustomed to Durban's sub-tropical summer, a visit there during January and February was bound to cause some reflection on building to combat climate.

It is often said that we must eventually develop a truly South African modern domestic architecture reflecting our national climatic and topographical characteristics, and it is generally inferred that such an architecture should have a flavour which links it with our cultural heritage. Yet it would still seem that there has been little practical attempt to solve the real problem of living on terms with our dynamic and diverse climatic conditions.

What we want, then, is not a national architecture but a number of regional solutions which would undoubtedly show as wide a divergence from one another as does the weather from West Cape to the High Veld and from the arid Karroo to the humid Natal coast.

It is astonishing to find that in a country as vast as ours there is probably less regional divergence in our domestic architecture than in countries as climatically homogeneous as Switzerland, Italy and Great Britain.

A sound basis for regionally characteristic architecture goes right down to the regional pattern as a whole but we are concerned here with architecture designed to fit an already established regional scene.

In the thirties there was a flaming red banner waved in the cause of "International Architecture." Looking back on that crusade we can see a slight modification in interpretation which could embrace all the recent regional offshoots of modern architecture which have occurred in other countries.

It would be foolhardy to plan a building in Durban in the same way as one in California with a reversal of orientation. Yet there are many things in common between lives in these two regions which, reflected in architectural terms would, no doubt, be recognisably identifiable with contemporary architecture in general.

The real point of confusion is that there are two distinct spheres of influence which operate on any work of art or architecture. Firstly there is the "time" influence which represents the general state of man at a particular point in history and is manifest in the thought processes afoot in the world at large. If this is the age of reason then a rational attitude to life might be expected throughout the world. Secondly the "place" influence which ties the work to the material factors of its setting. The locale and climate then are, so to speak, the media with which the architect works and are subjected to his mode of thought.

The mistake so often made is to consciously or self-consciously endeavour to evaluate these complex and interwoven factors and give equally self-conscious expression to them in architectural language. The result is often an over-simplification of the real building problem on hand and a highly subjective interpretation of the influences of time and place.

Indigenous architecture we shall certainly have when we ourselves have learned to live on terms with those factors in our setting which we cannot change.

The architect has never before been faced with the problem of creating the entire living environment of a people. His work has, in the past, been mainly concerned with the larger buildings of civic importance, leaving housing and places of work to the unprofessional hand.

The dwellings in other lands at which we might point a finger to illustrate regional characteristics are not the direct result of architecture but rather that of a long process of trial and selection common to all "peasant art."

The influences which make a building indigenous are, however, all well within the scope of architectural means. Our architecture is lacking in both regional and national flavour because we have failed to get closely enough to grips with the total statement of the problems and the relentless logic required to solve them.

Under the banner of "International Architecture," unadapted importations of foreign building elements were rife. The process of selection has operated continuously since then and much has been modified or discarded. This process is inevitable in a country not noted for its inventive or creative genius.

There is a tendency afoot to stem the sources of outside stimulus, a tendency which can lead only to a lamentable sterility.

Our problem is surely to examine closely all architectural developments abroad, particularly in those countries such as Italy, Spain, California and South America, where climate and topography show points of similarity to some of our own regions. To this examination we must bring an intense consciousness of our own problems and a ruthlessly objective power of selection.

Our architecture built on these lines will be international in the sense that rational thought is universal but indigenous in the sense that this rationalism has been brought to bear on our own specific problems.

FESTIVAL OF BRITAIN, 1951

FOURTH PART: "LIVE ARCHITECTURE" EXHIBITION

The story of British achievement to be told by the Festival of Britain in 1951 would be incomplete without the portrayal of architecture, town planning and building research in relation to everyday life of the people, and the idea of exhibiting these three aspects of British achievement in a "live" three-dimensional form was conceived within the Festival Organisation in 1948.

Five years earlier, the County of London Plan had been prepared by Mr. J. H. Forshaw (then Architect to the London County Council) and Sir Patrick Abercrombie, and was published by the London County Council. This plan included proposals for re-building as one comprehensive whole, areas in London which suffered the most extensive war damage. The Stepney-Poplar area, covering 1,945 acres, was one of these. War damage had increased the already urgent need for reconstruction arising out of overcrowded, insanitary conditions, obsolete and badly arranged buildings and the great shortage of open space and other amenities. Redevelopment of the area was placed high on the London County Council's priority list. Following the broad principles of the County of London Plan, reconstruction in the Stepney-Poplar area was planned as a series of eleven neighbourhoods varying in size from 5,500 to 11,000 people, each of which, with its own amenities and public buildings, would be self-contained as regards essentially local needs. Groups of neighbourhoods were planned with an eye to maintaining or recreating the three communities of Stepney, Bow and Poplar of which the Reconstruction Area forms the major part. These communities would each have amenities and public buildings appropriate to its wider needs and complementary to the neighbourhood amenities.

By 1948, when the Festival authorities were charged with the task of finding a suitable area in which their idea for a "live" three-dimensional exhibition of architecture, town planning and building might be carried into effect, the London County Council's plans for Stepney-Poplar were well advanced and a good deal of re-construction—mainly new housing projects—had already been put in hand by the Council and the metropolitan borough councils.

Combined advice from all authorities led to the choice by the Festival authorities of one of the three neighbourhoods in the Poplar community as the scene for the realisation of the projected "Live Architecture" Exhibition for the Festival of Britain. This neighbourhood—recently named after the late George Lansbury—covers an area of about 124 acres, and will eventually house some 9,500 people—about 42 per cent. of the pre-war population. Within Lansbury lies the bomb-scarred derelict site of some 30 acres which, in less than a year from now, with impetus added to the work by its association with the Festival of Britain, will come to life not only as an Exhibition but as a place where people will again have their homes and go about their daily lives—but under conditions far happier and more spacious and convenient than in the years gone by.

Planned development within this 30 acres being undertaken by the London County Council in association with the Poplar Metropolitan Borough Council, Roman Catholic school authorities, church authorities, brewers and others and in co-operation with the Festival organisation, will comprise 30 six, four, three and two-storey blocks of flats, maisonettes and terrace houses providing new homes for about 1,500 people, with special provision for the aged; a home for 45 old people; secondary, primary and nursery schools for about 1,050 children; a Roman Catholic Church to seat 700 and a Congregational Church to seat 400; a shopping centre with 38 shops and maisonettes above; a market place; and three public houses.

The development will represent a cross section of the different types of development planned for Lansbury as a whole. The buildings will be grouped round closes and spaces of differing sizes and character. The layout is, in fact, a series of neighbourly groups linked by open spaces and with an improved road arrangement. While this type of layout will be new to London's East End and the contrast between old and new is likely to be striking, a feature of most of the buildings will be the use of London stock bricks and purple grey slates which are the traditional building materials for this part of Poplar. The whole development will be seen as an urban landscape in which all the elements have been planned and designed together.

The London County Council is responsible for the general planning, the architectural co-ordination of the scheme and the progress of work, all of which are under the direction of the Architect to the Council.

Features designed and to be erected by the Festival authorities will include a Building Research Pavilion, a Pavilion containing an exhibition on Town Planning, a Cafeteria, a Vertical Feature and an administration block.

The Festival Organisation with the co-operation of the Council is carrying out an accelerated landscape scheme for the area to be developed in time for the Festival. Instead of the saplings and young shrubs which would normally be planted to supplement existing landscape features, full size trees and fully grown shrubs will be planted and will give the effect of a mature estate by the time the Festival opens. It is also intended that the streets and surroundings will be suitably decorated with bunting, flags, etc.

By this time, too, many of the houses, flats and shops will be occupied, one of the two churches will have held its first services, the schools and the market place will be in operation and the new and improved amenities will have begun to play their part in the re-birth of the neighbourhood.

DEVELOPMENT OF LANSBURY NEIGHBOURHOOD, POPLAR "LIVE ARCHITECTURE" EXHIBITION, FESTIVAL OF BRITAIN, 1951



KEY

1 Six storey flats.
2 Six storey flats.
3 Three storey flats.
4 Six storey flats.
5 Six storey flats.
6 Three storey flats.
7 Three storey flats.
8 Six storey flats.
9 Three storey flats.
10 Three storey flats.
11 Three storey flats.
12 Two storey flats for old people.
13 Three storey flats (Existing).
14 Four storey maisonettes.
15 Four storey maisonettes.
16 Three storey (Two storey maisonettes with flats over).
17 Three storey (Two storey maisonettes with flats over).
18 Two storey terraced houses.
19-24 Three storey terraced houses with a few single room flats for old people.
25 Two storey terraced houses.
26 Two storey terraced houses.
27 Two storey terraced houses.
28 Two storey linked houses
29 Two storey terraced houses.
30 Two storey terraced houses.
31 (Not shown). Future Health Centre on the site of 47-50.
32 (Not shown). Future R.C. Presbytery on the site of 51.
33 R.C. Church.
34 Upper North Street School (Existing) will be used for future Community Centre.
35 Trinity Church and Hall.
36 Seamans Mission and future extensions.
37 Trinity Church Manse.
38 Board of Trade Offices (Existing).
39 Public House (Existing).
40 New Public Houses.
41 R.C. Secondary School.
42 Old Peoples Home.
43 R.C. Primary School (Existing school and future extensions).
44 Ricardo Street Nursery School.
45 Ricardo Street Primary School.
46 Shopping Centre and Market Place.
47 Main Entrance and Administration Block.
48 Building Research Pavilion.
49 Vertical Feature.
50 Town Planning Pavilion.
51 Cafeteria.
52 Lavatories.
53 Childrens playgrounds.
54 Amenity Park.
● Show flats, show houses, and show classrooms.

L.C.C. Architects Department
Planning Division · June 1950

A. THE EXHIBITION BUILDINGS

The Festival Office will erect on a site within the re-developed area, adjacent to East India Dock Road, the following temporary structures for the period of the Exhibition :—

A Building Research Pavilion.

A Pavilion containing an Exhibition on Town Planning.

A Cafeteria.

A Vertical Feature.

An Administration Block.

In addition, the Festival Office will furnish and arrange for a number of houses and flats to be on view as show accommodation.

1. *Building Research Pavilion.*

This Pavilion will have as its introduction, a nearly full-size model of a portion of a house. This will show what happens to a house if it is "jerry built," that is, when certain fundamental principles of good building have not been carried out. It will show both interior and exterior, and the cause of the following everyday faults :—why cold water tanks burst in the winter; why the house becomes damp inside; why smoke from the chimneys is blown into the room; why the brick walls become cracked; what happens if the damp-proof course is omitted, etc.

The Pavilion itself is to be composed of small units linked together showing the various characteristics in building :—

(a) Stability
(b) Weather Resistance
(c) Heating
(d) Lighting
(e) Noise
(f) Durability.

The final part will show how a house should be built, with the fundamental principles of good building carried out and how building research is organised in this country. The Exhibition should appeal to both non-technical and technical people alike.

2. *Pavilion containing Exhibition on Town Planning.*

The interior of this pavilion contains an Exhibition designed to show in an attractive manner the following sections :—

(a) Battle for Land
(b) New Towns for Old
(c) The Heart of a Town
(d) Improved Techniques and Standards.

3. *Cafeteria.*

The cafeteria will serve about 2,000 people per day, between 10.30 a.m. and 10 p.m. Provision will be made for visitors to have their meals either within the cafeteria itself or outside on the terrace.

4. *Vertical Feature.*

This will take the form of a very tall crane to suggest and mark the site of this new effort in building. From the chaotic blitzed ruins we have now the birth of a new concept and design for living, which will be a marked contrast to the surrounding area.

5. *Administration Block.*

A single storey temporary building containing Management Office, Turnstiles, Ticket Offices, etc., and a Reception Room. This building will be the control point of the Exhibition.

6. *Show Accommodation.*

Arrangements will be made to enable visitors to see the interiors as well as the exteriors of some of the new buildings. One or two dwellings will be furnished by the Festival authorities in a manner consistent with the income of the average tenant.

CONSTRUCTION OF THE FESTIVAL OFFICE BUILDINGS.

The buildings are temporary and will be taken down at the end of the Exhibition. They will be constructed for the most part of a light steel frame, pre-fabricated roof panels, brick and canvas. The general effect will be one of lightness and gaiety, which will contrast pleasantly with the existing surroundings.

B. DEVELOPMENT OF LANSBURY

1. Town Planning.

The main planning problems were the grouping of scattered industries into an industrial zone along the line of the Limehouse Cut; the re-siting and improvement of the large street market in Chrisp Street; the widening of the East India Dock Road and the reduction of the number of side roads leading to it so that traffic could have an uninterrupted flow; the diversion of through traffic round the edge of the neighbourhood to make it safe for children; the allocation of suitable sites for schools, churches and other public buildings; and the provision of open space.

The development in Lansbury to be undertaken in time for it to form part of the "Live Architecture" Exhibiton will represent the first of four stages in the re-building of the neighbourhood. This first stage includes a cross section of the different kinds of development planned for Lansbury as a whole.

The buildings, of varying heights, will be grouped round closes and spaces of different sizes, each with its individual character. In some cases there will be children's playgrounds in the centre of blocks, completely protected from traffic. The layout is in fact a series of neighbourly groups linked together by open spaces. While this type of layout is new to the East

End of London and the contrast between new and old forms of development is likely to prove striking, the architectural treatment of most of the buildings will include the use of London stock bricks and purple grey slates which are traditional building materials for this part of Poplar.

The buildings have been designed by a number of different architects working together with town planners as a team. The general massing of buildings and tree planting was laid down in advance by the planners and the architects were asked to conform generally to this in working out their individual detailed designs. As each building began to take shape on the drawing board, it was considered in relation to its neighbours and any necessary adjustments made to fit in with the general scheme. The buildings will thus have grown up as a social group and as a result every building will have gained by being seen as part of an urban landscape in which all the elements—buildings, trees, roads and street furniture have been designed together.

2. *Housing Development.*

Five sites, covering a total of about 12.8 acres, are allocated for housing.

Site No. 1.

References to Key Plan—1 to 9 inclusive.

The proposed development consists of the erection of five blocks six storeys in height and four blocks three storeys in height comprising a total of 158 flats (495 rooms).

The three-storey blocks will be of traditional brick construction with pitched slated roofs and eaves. The six storey blocks will be of reinforced concrete frame construction with outer skins of brick, and with a "monoform" aluminium roof of 15 degrees pitch. The six storey blocks will have a total of seven lifts. Private balconies will be of reinforced concrete relieved with glass brick panels. The main entrance to the blocks will be provided with concrete canopies, hard wood trellis screens and flower boxes; there will also be pre-cast concrete flower boxes to the ground floor flats. All plumbing will be in internal ducts and all windows will be fitted with steel casements and wood surrounds.

Block 1 is on the site of the former Poplar Hippodrome, the basement of which will be utilised for a laundry for the flatted estate, stores, tenants' workshop, twenty-four tenants' storage rooms and twelve perambulator sheds. In addition, sixty-four external perambulator sheds will be provided and a further two perambulator stores in the entrance to block 9. Ten additional laundries will be provided on the ground or first floors of the blocks.

The open space surrounding the blocks will be laid out as a landscape garden which will include sand pits for small children. A children's playground fitted with swings, etc., will be provided in a central position on this site.

Sites 2 and 4.

References on Key Plan—12, 14, 15, 16 and 19 to 27a (inclusive).

The two sites are being developed together as one and the scheme includes blocks of three and four storeys as well as two storey terraced houses.

There will be eighteen single room flats in a two storey block specially suitable for occupation by old people. The area at the rear of the block will be laid out as a garden for the old people and seats will be provided.

Three terraces of two storey houses are included in the scheme, each house having its own garden. There is to be one block three storeys high containing maisonettes with flats over, one staircase giving access to each pair of flats. Houses will have private gardens and the flats will each have a terrace garden. The two four storey blocks will contain maisonettes with maisonettes over, access to the upper maisonettes being by a recessed balcony on the second floor. At the rear of these blocks small gardens will be provided for each maisonette.

At one part of the site three storey blocks will be grouped to form two closes, the central areas of which will be planted. These three storey blocks will contain a mixture of three storey houses for the larger families, two storey maisonettes and single room (bed/sitting) flats for old people. The development also provides for a children's fitted playground, ninety-two pram stores and nine garages.

The buildings will be of traditional brick construction with pitched roofs. Among the 166 dwellings there will be sixteen distinctive type plans and within each type there will be considerable variation.

Dust chutes are provided in the four storey blocks to discharge over a container in the refuse chamber. All flats will have private sun balconies.

Working kitchens are being provided in all flats and in the majority of the maisonettes. In the other maisonettes and some of the terrace houses there will be dining kitchens. All kitchens will have modern fittings. Bathrooms will be fitted with wash-basins. W.C.'s are in separate compartments except in the one room flats, where the W.C. is in the bathroom. An open fireplace with back boiler will be provided in each living room with provision for the installation of an immersion heater in the cylinder for heating water in the summer months.

Site No. 3.

References on Key Plan—10, 11, 18, 28, 29 and 30.

The flats will be of traditional brick construction with pitched roofs and the terrace houses will be of the normal type. Two drying rooms with gas heated drying cabinets and thirteen pram stores are to be incorporated in the blocks of flats and the development also provides for three garages.

Dust chutes will be provided in the three storey blocks to discharge over containers in the refuse chambers. All flats will have private sun balconies and flower boxes.

Working kitchens are to be provided in all flats and houses

and will be equipped with modern fittings. Bathrooms will have washbasins, and W.C.'s will be in separate compartments except in the one room flats where the W.C. is in the bathroom. An open fireplace with back boiler will be provided in each living room with an immersion heater in the cylinder for heating water in the summer months. Drying rooms equipped with gas heated drying cabinets are to be provided for the use of the flats in the three storey blocks.

Site No. 5.

Reference on Key Plan—17.

The dwellings are grouped in a continuous terrace and will be of traditional brick construction with a pitched roof. Nine perambulator stores are incorporated in the block. Each maisonette will have a separate garden and all flats will have private sun balconies. All flats and maisonettes will have working kitchens. Bathrooms will have washbasins. W.C.'s will be in separate compartments. An open fireplace with back boiler will be provided in each living room with an immersion heater in the cylinder for heating water in the summer months.

A public house will be built at the northern end of the site as part of the housing contract on behalf of the brewers and its design will harmonise with the terrace.

3. *Roman Catholic Church and Presbytery.*

References on Key Plan—33 and 32.

The Church and Presbytery, which are being built for the Roman Catholic authorities, will not be complete until 1952. An Assembly Hall for which a site has not yet been selected is also envisaged.

4. *Trinity Congregational Church with Church Hall and Manse.*

References on Key Plan—35 and 37.

The Church Hall and Manse are to be built for the Church authorities and will replace the former buildings destroyed in the blitz. The church will seat four hundred people and will have a gallery round three sides projecting over "cloisters."

5. *Canton Street Roman Catholic Secondary School.*

Reference on Key Plan—41.

This school is being built for the Roman Catholic authorities for about 450 boys and girls of eleven to fifteen years of age on a site of about three acres on the north side of Canton Street.

The layout is designed to provide a pleasant setting to the entrance with trees and lawns. The classrooms will be protected by shrubs and trees from the playground which is to be light red in colour. The Dining Hall will look out over a pool on to a small garden. The classrooms and other rooms are arranged in three two storey pavilions of a "T" shape on plan. The pavilions will be connected by a corridor on the first floor.

The Entrance Hall will form a link between the cloaks' pavilion and the Gymnasium and Assembly Hall. Medical rooms and common rooms over the dining and kitchen accommodation will form the third pavilion.

A stage will have natural lighting from the sides for drama classes and a low ceiling to assist the acoustics. The stage apron can be altered either to form steps running the full width of the hall, or to provide stepped platforms for an orchestra.

The classrooms will have a top light and a low window on one side protected by overhanging eaves designed to keep the sun off the desks during the summer term. The school is to be constructed with an exposed reinforced concrete frame and brick walls.

6. *Home for old people.*

Reference on Key Plan—42.

There is a great need in the new neighbourhood for a home for old people who find it difficult to live on their own and need care and attention. This L.C.C. home in Lansbury will accommodate forty-nine men and women and five resident staff. The accommodation will be on two floors only, and consists of thirty-three single and eight double bedrooms, each provided with washbasins and hanging cupboard, and five sitting rooms of varying sizes, one of which is to be equipped with bookshelves. The dining room will be wired for cinematograph shows. All sitting rooms are to have wireless, and one of the large sitting rooms is to be wired for television. Special features of the home are to be non-slip floors, handrails to corridors, and easy going staircases and other facilities for the convenience of comfort of old people.

The building is to be of brick with reinforced concrete floors and low pitched slated roof. It will be centrally heated and special attention is being given to heat and sound insulation. The garden is being laid out to provide sheltered seating, and to offer attractive views from the loggias in the building.

7. *Ricardo Street Primary School and Nursery School.*

Reference on Key Plan—45 and 44.

The new Ricardo Street Primary and Nursery Schools will occupy an island site of three acres which includes that of the old school which was destroyed in the "blitz." The Primary School will accommodate 320 juniors and 200 infants. The main building is planned on two floors, the juniors occupying the first floor in eight classrooms and the infants the ground floor in five classrooms. Also on the ground floor of the classroom block will be a common dining room and kitchen. There are to be two assembly halls, one above the other. An administration block will form a projecting wing in which the staff will be accommodated and on the second floor will be a caretaker's flat. There will be separate paved playing areas for juniors and infants and garden and outdoor teaching areas.

The nursery school will accommodate eighty children and is to be a separate single storey building comprising two groups each of one large and one small playroom and self-contained except for sharing the mechanical services with the main school. The nursery school will have entirely separate paved play spaces, sand pits and garden.

The administrative block, staircase hall and assembly halls for the Primary School will be of traditional construction faced mainly with London stock brick. Except for this a light steel

construction has been adopted to permit speedy and economical construction. In most respects the Nursery School will be of similar construction.

8. *Shopping Centre and Market Square.*

Reference on Key Plan—46.

The shopping centre and market place will occupy a site of about three acres between Kerbey Street and Chrisp Street and will serve adjoining neighbourhoods as well as the whole of Lansbury.

The lay-out allows for an arcaded approach to most of the shops so that shoppers will be well protected from the weather. The arrangement of stalls round the market place permits close contact between shops and stalls, some of which will be owned by shopkeepers. Both in the market place and in the pedestrian shopping way to the north, customers will be able to shop in complete safety, without danger from passing road traffic. The first stage of the shopping centre to be completed will comprise thirty-eight shops with living accommodation, including perambulator stores, twenty-eight garages for commercial vehicles, and a kiosk. The housing accommodation will consist of thirty-nine maisonettes, and four flats, a total of one hundred and thirty-nine rooms.

The shops will, in the main, be lock-up shops only and the majority will be of a standard size (eighteen feet frontage and fifty feet depth); there will be separate flats or maisonettes over the shops.

The intention is to create a well-balanced shopping centre with all necessary trades represented in their proper proportion according to the need and demand in the locality.

Twelve temporary shops are being provided on a site at the corner of Ellesmere Street and Giraud Street and four on sites in Chrisp Street to accommodate traders displaced in the early stages of development before the new permanent shops are ready for occupation.

The shops to be erected at this stage are planned on two sides of a market square which will accommodate temporary stalls from the existing street market in Chrisp Street. It is hoped that it may later be possible to have a standard framework and a brightly coloured canvas canopy for each stall. Permanent stalls for the sale of meat and fish will be provided in a covered market on the south side of the square. It has been suggested that at the south-east corner of the site there should be a clock tower and it may prove possible to build this eventually. The public houses will be at each end of the block of shops. Maisonettes over the shops will have bow windows looking over the market square. The external walls of the maisonettes will be of London stock bricks but dark plum red bricks will be used for the smaller buildings. Copings will be of artificial stone and grey-green slates will be used for the roofs.

IN PRODUCING THIS THREE-DIMENSIONAL LAYOUT.

The neighbourhood has been regarded as a series of visual groups. The buildings have been planned round open spaces of varying sizes and shapes, each with its own type of tree planting and its own character and linked by roads and pedestrian ways. This idea is, of course, by no means new, but it is something of a novelty in the East End and in the contrast between new and old forms of development is likely to be striking.

Pedestrian ways and linked open spaces have been used to a considerable extent, as the design evolved. Thus the Upper North Street open space which it is proposed will include a formal terrace and ultimately an ornamental pool will provide a setting for the public buildings placed around it — two churches, a Health Centre and a Community Centre. From it a pedestrian way leads past school playgrounds and the gardens of the Old People's Home to the principal open space which will be mainly occupied by playing fields and recreational facilities of various kinds.

The market place will be a formal open space of another kind with the interest given by the bustle of the street traders and their gay and colourful stalls; to the north of the market place will be a small rectangular place bounded by a school, a few shops and a library, and this in turn will lead to a parkway curving away to the north.

In the same way the housing and flats are grouped into closes and squares of different sizes, each with their individual character. In some cases there are children's playgrounds in the centres of blocks completely protected from traffic.

From this point of view the layout can be regarded as a series of groups linked by open spaces. The grouping has its importance from a sociological as well as from a visual point of view. A feeling of neighbourliness and social responsibility is much more likely to develop where dwellings are grouped than where they are strung out in long terraces or repetitive blocks of flats. Children are also more likely to behave well if they are part of a community and if they have their own playspace adapted to their needs.

CONTEMPORARY JOURNALS

COMPILATION BY UGO TOMASELLI

ARCHITECTURE

Architectural Forum—October, 1950, pp. 111—176.
Remodelling old buildings: Forum devotes a complete issue to old buildings remodelled. Buildings are becoming obsolete faster than ever before because the technological improvements in design, construction and mechanical equipment of new buildings have been particularly rapid and far-reaching during the past ten years. Pointers are given on the co-ordination of new building fronts to the existing streetscape, and the renovation of old interiors. The following techniques of modernization are discussed:—
(a) Air conditioning, (b) Interiors, (c) Accoustics, (d) Elevators, (e) Lighting, (f) Exteriors.

Journal R.A.I. of Canada—November 1950, pp. 371—372.
Articles:—
(1) Agreement between Architect and Client, by M. Fleming.
(2) Architect, Critic and Public, by J. M. Richards.
(3) The Architect and Public Relations, by R. McKee.

Architectural Forum—November, 1950, pp. 138—139.
The works of Oscar Niemeyer: A review of new buildings of South America's most famous Architect.

COMMERCIAL

Journal of the Royal A.I. of Canada—October, 1950, pp. 332—356.
Branch Banks: This issue of the Journal is devoted to a survey of Bank buildings. Articles cover the following:—
(1) The why and wherefore of modern bank design, by L. W. Townsend.
(2) Recent trends in bank building, by S. G. Davenport.
(3) The Branch bank in the market place, by E. Arthur.
(4) Branch bank interiors, by H. Moody.
(5) The influence of American design on Canadian bank buildings, by Charles Pratt.
The issue illustrates numerous plans and photographs of bank buildings.

Journal R.A.I. of Canada—November, 1950, pp. 384—385.
Bookshop for the University of Toronto. Rounthwaite, Cameron, Murray & Fairfield, Architects.

Progressive Architecture—October 1950, pp. 59—76.
Architects offices: Critique.
(1) Palm Springs, California, Clark & Frey, Architects. A two-storey structure, with the offices upstairs and rental space on the ground floor.
(2) La Jolla, California. Architects: Mosher & Drew. A new building added to an informally arranged group of 1890 redwood structures that the architects have remodelled into a co-ordinated center consisting of six shops and a restaurant.
(3) Synacuse, New York. Sargent, Webster, Crenshaw & Folley, Architects. New offices on a large irregular-shaped plot for the firms exclusive use.
(4) Los Angeles, California. Wurdeman & Becket, Architects. Offices for the firm on the top floor of a new building designed and owned by the firm.
(5) Office building Houston, Texas. Mackie & Kamrath, Architects. Headquarters—offices, workspace, draugthy room—for a company engaged in geophysical research and prospecting for potential oil and gas reserves.

Progressive Architecture—November, 1950, pp. 60—64.
Toll Exchange: Oakland, California. H. Thomsen & Wilson, Architects. A toll-center building to serve a new direct-dialing, long distance telephone system.

Progressive Architecture—December, 1950, pp. 51—62.
Two industrial plants are illustrated:—
(1) Gerrish Milliken Mill, South Carolina. Carson & Lundin, Architects. A completely air-conditioned plant for the manufacture of rayan, nylon and combination-yarn fabrics.
(2) A. B. Dick Company: Hiles, Illinois. A modern plant was required to replace several old downtown Chicago buildings, where the company formerly conducted its operations. Administrative offices and facilities for the manufacture of duplicating machines, stencils, inks and other supplies required for mimeograph operations.

Architectural Forum—December, 1950, pp. 102—107.
Ford office center. Proposed administrative center showing how 3-level garage connecting two office towers is combined with moving stairs to expedite the ingress and egress of Ford's new office centre of Dearborn, Michigan. Skidmore, Owings & Merril, Architects.

CONSTRUCTION

Progressive Architecture—October, 1950, pp. 101, 103, 105, 107.
The following selected details are illustrated.—
(1) Residence: Exterior railings. Architect: R. Johnson.
(2) Hotel: Interior railings. Architects: Reisner & Urbahn.
(3) Institution: Entrance doorway. Architects: Ketchum, Gina & Sharp.
(4) Residence: Fireplaces. 3-fireplaces by architects C. Hornbostel, Ed. Stone and R. Neutra.

Progressive Architecture—November, 1950, pp. 70, 73, 75, 81.
The following selected details are illustrated.—
(1) University: Glass curtain wall. Architects: Saarinen, Swanson & Saarinen.
(2) University: Main entrance doors. Architects: Saarinen, Swanson & Saarinen.
(3) University: Entrance doors to Auditorium. Architects: Saarinen, Swanson & Saarinen.
(4) University: Main stairs. Architects: Saarinen, Swanson & Saarinen.

Progressive Architecture—December, 1950, pp. 85, 87, 89.
The following selected details are illustrated.—
(1) Residence: Window wall. Gibbons & Heidtman, Architects.
(2) Residence: Clerestorey, Lighting and Bookcase. Gibbons & Heidtman, Architects.
(3) Shopping center: Display case. E. Payer, Architect.

DOMESTIC

Architectural Forum—August, 1950, pp. 84—95
(1) Guest house designed by Philip Johnson, incorporating a small art gallery. In this scheme the designer uses a water floored patio, fed by artificial rain.
(2) Architect Albert Frey designs pools inside and out to give distinction to a small house in Palm Springs desert built of simple materials.
(3) Hillside house framed on quonset ribs near Knoxville shows imaginative application of new prefabricated framing techniques. J. FitzGibbon, Architect.

Progressive Architecture—October, 1950, pp. 79—82.
A small two bedroom house on a 75 ft. x 100 ft. corner site on Rhode Island. I. Rakatansky, Designer.

Progressive Architecture—November, 1950, pp. 53—57.
House: Paradise Valley, Arizona. Schweikher & Elting, Architects. A home for a family of four on a 20 acre site on the edge of the desert. The requirements included a study for occasional business use and to house the owners' sport equipment.

Progressive Architecture—December, 1950, pp. 45—48.
A country retreat for relaxation. Designed for a wooded hillside site, this house is simple and blends easily with its surroundings. H. Harris, Designer.

Architectural Forum—November, 1950, pp. 113—121.
Four San Antonio Houses are illustrated.
(1) Architect Milton Ryan designs a house with Louvred sun hoods, stilt foundations and roof pool to combat heat.
(2) Small compact house with large add-shaped roof by architects Cocke, Bowman & York.
(3) Minimum house with carport angled to enclose a near yard patio. Architects: De Haven Pitts.
(4) Minimum house with garden room to give spaciousness. Ned Cole, Architect.
(5) Doctors house and office in Lake Placid, New York, on a narrow site with a steep slope. P. Beidler, Architect.

Architectural Forum—December, 1950, pp. 78—79, 80—87.
(1) House of the year wins A.I.A. award. Architect: A. Quincy Jones. An economical rectangular floor plan is given life with large windows and vision screens in San Diego.

(2) Various small house plans of good contemporary design are illustrated for a large area in San Francisco Bay. S. Anshen & W. Allen, Architects.

HOSPITALS

Architectural Forum—December, 1950, pp. 96—100.
80-Bed community hospital in New Mexico, by Architects W. Pereira & T. Matthews combines gardens, inexpensive materials and finishes and lots of space to produce a country-club atmosphere.

INDUSTRIAL

Architectural Forum—November, 1950, pp. 136—137.
Farm machinery building in Rio de Janeiro, designed with wood arches to give Caterpillar Tractor Co. an eye-catching advertisement as well as efficient sales, exhibit and repair space. Architects: M. Milton & M. Roberts.

Architectural Forum—December, 1950, pp. 108—114.
Revolutionized warehouse design. A new approach to handling methods reshapes the storage building to reduce the cost of retail distribution, in Columbus, Ohio. The Austin Co., Architects.

INTERNATIONAL

Architectural Forum—November, 1950, pp. 93—112.
United Nations Secretariat. The history behind the most controversial building of this century. Forum publishes a critique by three dozen proponents and opponents in America and abroad, an analysis of its design and its influence on future buildings, and a discussion of its orientation and how it affected air-conditioning and other mechanical installations.

MATERIALS AND METHODS

Progressive Architecture—October, 1950, pp. 83—93.
(1) Chimneys to burn, by R. E. Merick.
(2) Interior wall materials for residences. Part 2, by G. Conklin.
(3) Cold cathode fluorescent lighting, by B. Greene.

Progressive Architecture—November, 1950, pp. 94—96.
Interior wall materials for residences. Part 3, by G. Conklin.

Progressive Architecture—December, 1950, pp. 49—50, 70—81.
(1) Office practice: What is a Typical Architectural Organization.
(2) Residential baseboard heating, by W. McGuinness.
(3) Streamlined specifications: Copper roofing sheet metal work, Part 2, by Ben Small.

Architectural Forum—December, 1950, pp. 92—95, 101, 114—121.
(1) Brise Soleil. A technical analysis of the growing use of projecting sunshades indicates that both cliche and function are influencing the exterior appearance of today's office buildings.
(2) Walk-ups vs. Elevator Apartments. A debate in New Orleans points to the logic of multi-storey construction for dense areas.
(3) Building without code. A technical analysis of the expensive limitations of today's codes and the construction progress they have battled up, by Robert Davison.

RECREATION

Progressive Architecture—December, 1950, pp. 66—69.
A change house, with facilities for 113 men and 50 women to serve two basket ball fields and an outdoor track in Geneva, Switzerland. Brera & Waltenspuhl, Architects.

Architectural Forum—December, 1950, pp. 88—91.
Stadium. Tension-ring stadium illustrates a new design approach to produce a 99,000 seat stadium with a roof but without visable support. A southern university project designed by Architects Raymond and Rado and Engineer P. Weidlinger.

SCHOOLS, ETC.

Progressive Architecture—October, 1950, pp. 65—89.
Science and pharmacy buildings for Drake University, Des Moines, Iowa. Saarinen, Swanson & Saarinen, Architects. The two buildings are arranged at right angles to each other and are connected by an enclosed fortbridge at the top floor level. Two auditoriums are grouped in an interesting manner, keeping floor area to a minimum, and utilizing the same foyer.

Architectural Forum—November, 1950, pp. 140—145.
Technical High School in Sweden features top-lighted auditorium. Nils Ahrbarn & H. Zimdahl, Architects.

Architectural Forum—December, 1950, pp. 61—70.
University Domitaries. The architects collaborative design Harvard's new Graduate Center which demonstrates a new concept of space planning and which retains the quadrangle pattern.

SCULPTURE

Progressive Architecture—December, 1950, pp. 63—65.
Sculpture for Architecture, by Mitzi Cunliffe.

TOWN PLANNING

Architectural Forum—December, 1950, pp. 72—76.
Urban Redevelopment. The redevelopment of cities in small pieces with the aid of local capital and private enterprise. An analysis by Henry Churchill.

TRANSPORT

Journal R.A.I. of Canada—November, 1950, pp. 374—380.
International Aviation Building, Montreal Quebec, by G. F. Drummond. The three buildings, International Aviation Building, C.N.R. office building and hotel are designed to express their separate identities and at the same time express a co-ordinated group.

Progressive Architecture—October, 1950, pp. 51—58.
Railroad station: Roanoke, Virginia. Architect: A. Fordyce; consultants: Raymond Loewy. The program required the complete renovation of an outmoded station including new provisions of covered shelters, new moving staircase and additions to concourse and waiting room spaces.

THE STUDENT'S FORUM

"ONE MAN'S MEAT . . ."

There exists a popular belief that all students of art and architecture at the University are ardent enthusiasts of Modern Art. To test the truth of this belief, we took two students, both well-known personalities in their respective faculties, to see the exhibition of the sculptures and monotypes of Lippy Lipschitz now on view at the new Gainsborough Galleries. They obligingly and unstintingly gave us their impressions and reactions, and these we now set forth.

* * *

The Lipschitz Exhibition as seen by Miss Beryl Tyacke, final-year student of Fine Arts.

There are probably three kinds of readers of exhibition criticisms. First there are those who want to know what it is all about, but are too lazy to see for themselves. Second come those who want to know if it is worth seeing. The third group may have seen it but in any case they want someone to disagree with.

To the first: the exhibition is one of sculptures and monotypes. The latter are just that—pictures of one flat colour. They express isolated states of existence, such as utter relaxation, e.g. "Monody," unrestrained movement as in "Brown Dancer" and expectancy as in "Profile of Hope"—a unique departure from the norm. To the modern decorator the lyrical, poetic designs in horn and ivory will appeal for spaces that want attention to be called to themselves. The loveliest piece of decoration is "Calyx," the smooth modern conception of a whorl in which to enclose a child. For the rest, there are some solid masses kept well within the bounds of the material, they are sensual half-worldly, half-mythical creatures in complete contrast to the flowing horns of the rest of the exhibition.

To the second group I would say it is worth seeing not only for the amusement of watching one's fellow spectators' looks of admiration or sometimes ill-concealed horror, but because as an artist Lippy Lipschitz has caught the breath of an emotion at its rarest, albeit his expression is simple.

To the third group: You do not agree that he should mix metals with his natural medium of horn? Nor do I. To everyone who is interested in sculpture—do go and see the exhibition for yourself.

* * *

The Lipschitz Exhibition as seen by Mr. Robin Middleton, B.Arch.

The current showing of Lippy Lipschitz's monotypes and sculptures at the Gainsborough Galleries conveys only one impression: "Look! I can do it with my eyes shut!"—but is it worth the effort and the time?

Though he has for some time been established as an artist of note, he has never received proper attention here, and this exhibition, the first we have had for a long time, may serve to dispel some of the claims made for him by his more enthusiastic admirers to be one of the foremost of South African sculptors.

I must say that I have never been a particularly passionate admirer of Lipschitz's work. One can admire his craftsmanship, which he displays in such pieces as "Sea-Nymph" and "Janet," and his understanding of his materials. One can also find much that is interesting in his theories of composition and spacial arrangement and his efforts to work them out through sculptural media. But his work neither calls for nor evokes intense feeling in the spectator. Browns and greens and dull reds all muted and autumnal in their tonality are his favourite colours, and intertwined figures are his favourite mode; and although his works appear to exhibit great compositional acumen and dexterity, there is want of emotional force so great that at times they are in danger of falling out of the category of art and into that of mere decoration.

Most of the works are a bit dull and clumsy in execution; but as the years go by, his approach becomes more sensitive and more assured. The dullness of the work is partly due to the arrangement of the exhibition and the choice of the exhibits—the monotony in the collection might have easily been avoided, and this was as unfortunate for individual works as for the exhibition as a whole.

The most interesting piece of sculpture on the show was "Africa," although it has serious limitations in execution, and the solidity and weight of the piece degenerates into mere heaviness.

The small work entitled "Idea" is perhaps one of the worst trivialities of the show. It is presumably conceived with the fervour with which the expressionists and the early Bauhaus group produced their work, and it probably attempts to carry on this tradition. It fails, however, on all counts. It has no value as a work of sculpture, the craftsmanship is shaddy, and it is surprising to find an artist with his reputation falling back on a device as worn as this.

I, for one, can make no sense out of "Driftwood" and "Searching," both included in the exhibition and both much admired by others, while in "Godhead" I see nothing but a meaningless block of stone.

The exhibition as a whole is quite inconsequential; it gives no idea of the man's development and is about as stimulating as a cup of cold tea.

NOTES AND NEWS

CHAPTER OF QUANTITY SURVEYORS

TRANSFERS

Mr. J. B. Williams has transferred from Salaried to Practising Membership.

PARTNERSHIPS

Mr. J. B. Williams has joined the Pietermaritzburg Branch of the firm of Messrs. J. Walters and Simpson, of Durban; the name of the firm in Pietermaritzburg is now known as Walters, Simpson and Williams, practising at 28/29 N.B.S. Building, Timber Street. The constitution and name of the Durban firm remains unchanged.

NEW REGISTRATIONS

Mr. W. S. Harland, of Durban; Mr. G. W. O. Kemmis-Betty, of Johannesburg; and Mr. A. J. Lee, of Durban, were admitted to membership with effect from November, 1950.

TRANSVAAL PROVINCIAL INSTITUTE

NEW REGISTRATIONS

The following have been admitted to membership of the Institute:

(a) As Practising Members: Mrs. M. C. Davenport, Messrs. W. W. Eliasov, R. B. Harrison, M. Kaplan, B. Mendelsohn and J. de Ridder.

(b) As Salaried Members: Messrs. D. H. Robinson and H Stern.

TRANSFERS

The following members have transferred their membership as follows:—

(a) From Salaried to practising: G. H. Andrews, H. N. Werkman.

(b) From Practising to Salaried: N. Kip.

(c) From Practising to Retired: Miss N. Edwards, Mrs. C. Wilson.

(d) From Practising to Absentee: L. R. Geullovd, R. A. J. Guy.

(e) From Salaried to Absentee: Miss Y. Kirby; F. H. Vermeulen.

The following have transferred to other Institutes: Mr. E. Luck to the Natal Provincial Institute and Mr M. de V. Aitcheson to the O.F.S. Provincial Institute.

DECEASED

Mr. R. M. Robertson died on the 14th January, 1951.

NEW ADDRESS

Messrs. Hanson and Tomkin have moved to new offices at 1006, Cavendish Chambers, Jeppe Street, Johannesburg. Telephone 22-8730.

CORRECTION

In the list of accepted tenders for Provincial Services for the quarter ended 30th September, 1950, published in the issue for December, 1950, the name of Messrs. Austin, Stewart and Ellis was inserted against the service appearing under item 4 on the list (Pretoria Normal College, New Principal's Residence). The Administration did not commission a quantity surveyor for this service

BOOK REVIEW

ELECTRICITY METER TESTING CODE

The Standards Council has recently published a Code of Practice for the Testing of Electricity Meters. This Code contains recommendations regarding limits of error, testing and certifications for the standard and substandard instruments used for testing.

Copies of the Code (S.A.B.S. 01-1948) priced at 10/- each post free, are now obtainable from the South African Bureau of Standards, Private Bag 191, Pretoria.

Electricity to the value of many thousands of pounds is sold to consumers every month and is measured by means of meters on which there is no compulsory check, whereas, the ordinary shopkeeper is required by law to have his weighing scales regularly assized by government inspectors.

As the degree of accuracy of electricity meters may make a considerable difference to the amount that the purchaser of electric current has to pay, it seems reasonable to expect that electricity meters also should be regularly controlled. It is true that electricity meters are not subjected to such rough handling as weighing scales, but they are nevertheless liable to lose their accuracy owing to a number of circumstances beyond the consumer's control.

Most of the larger suppliers of electricity such as the Electricity Supply Commission and the bigger municipalities already have facilities for checking and repairing meters, but practice regarding the frequency and manner of checking, varies considerably.

In the smaller municipalities, it is not unusual to find that no systematic testing is done at all. Thus unless the consumer keeps a close check on the amount of current he uses, he may quite unsuspectingly be paying too much or too little for his electricity. If he doubts the veracity of his meter, he may have it tested, but at the risk of losing his deposit of 10/- or £1.

The Council's code of practice recommends that the error of registration in a meter should be not more than 2½ per cent. and that meters should be tested and adjusted once every six years in order to ensure that this standard of accuracy is maintained.

Electricity meters are usually the property of the suppliers of the electric current and owners who decide to adopt the recommendations of the code of practice will therefore either need to install their own testing equipment, or to make arrangements to have their meters regularly checked and adjusted at an established testing station. They will also have to arrange for the calibration of the sub-standard testing equipment.

The South African Bureau of Standards is equipped to calibrate all apparatus used in testing electricity meters and is prepared to undertake this service as well as the routine checking of commercial grade meters for all electricity suppliers whether they elect to adopt the code or not.

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