

# jamaica architect

A REVIEW OF ARCHITECTURE IN THE TROPICS

VOL.1 NO.2 1967

**Portmore**

**The Environment of Change**

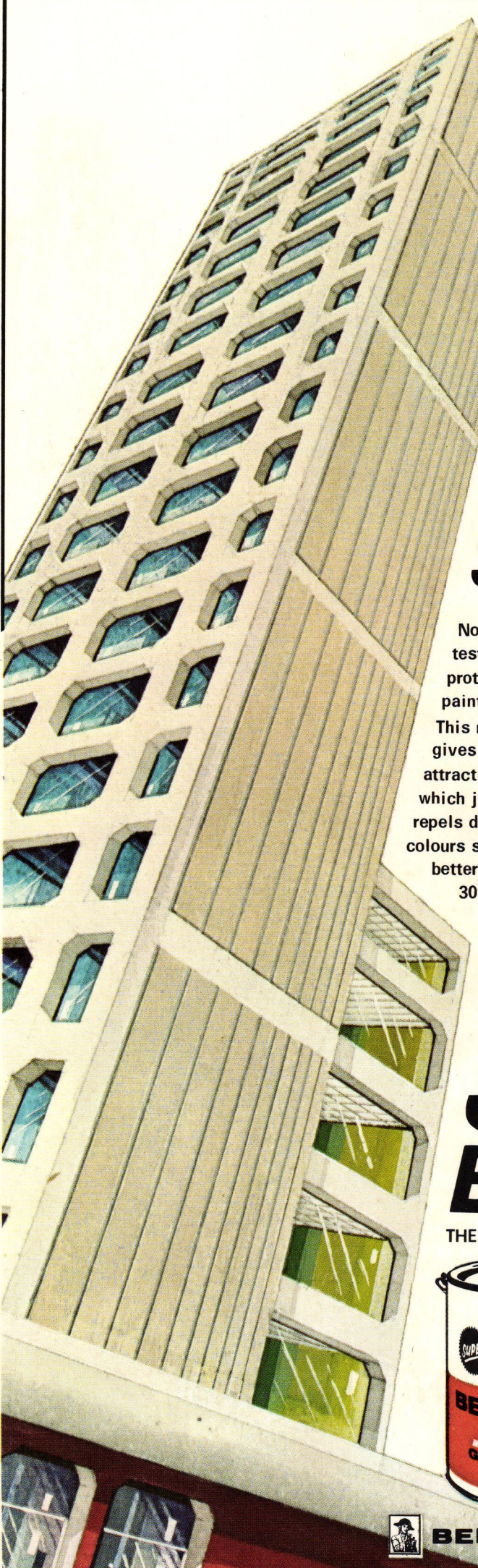
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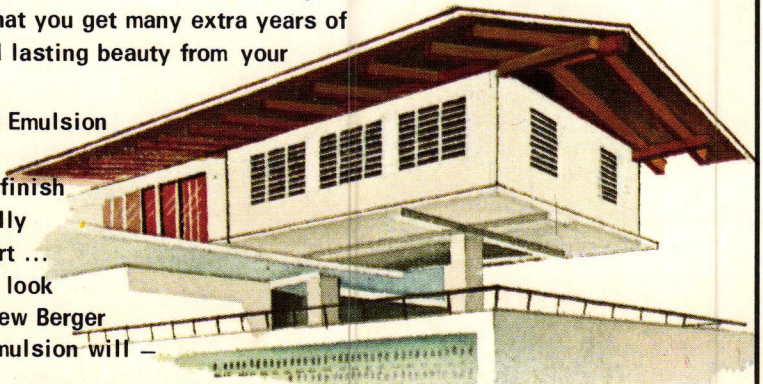




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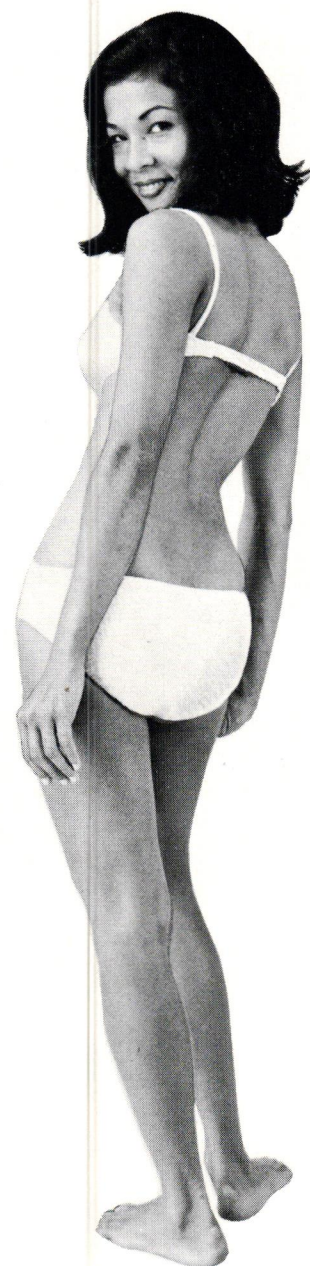
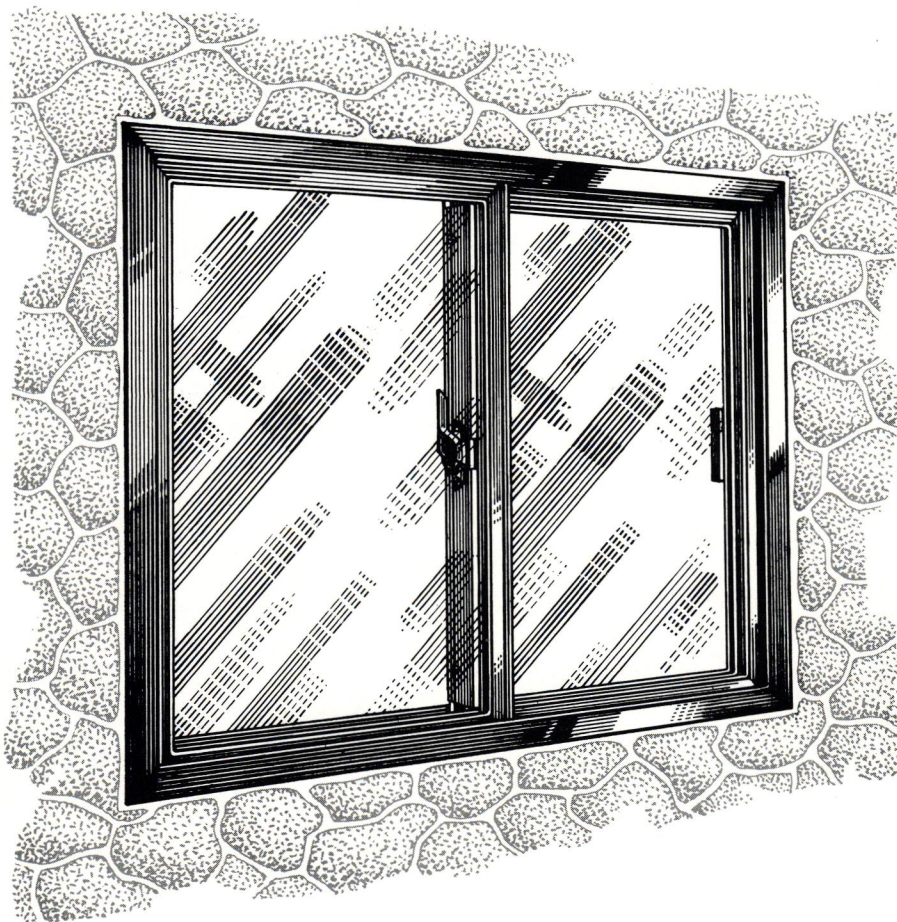


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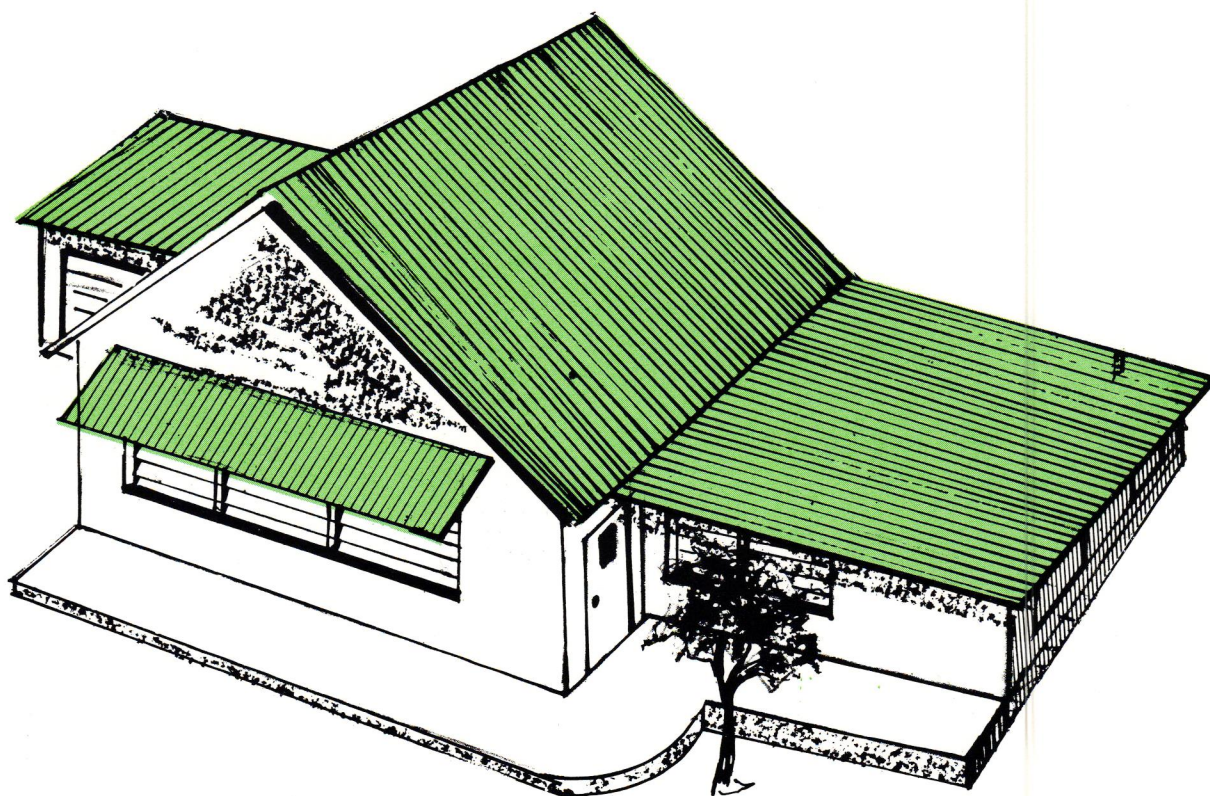
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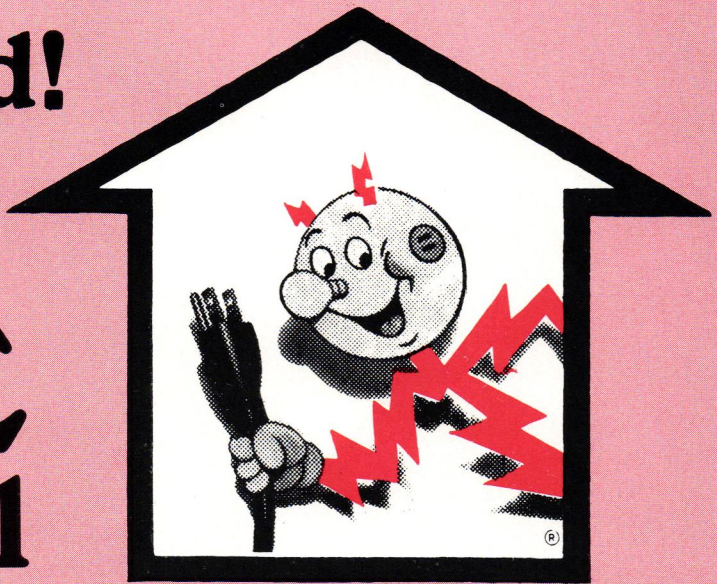
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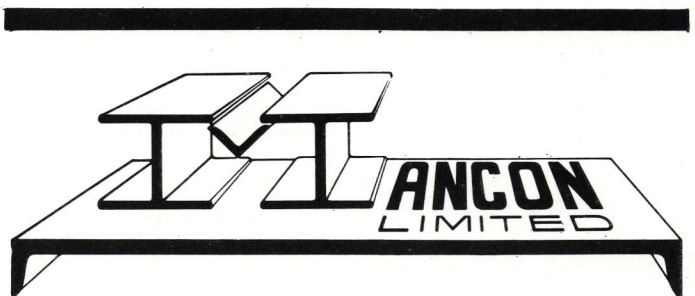
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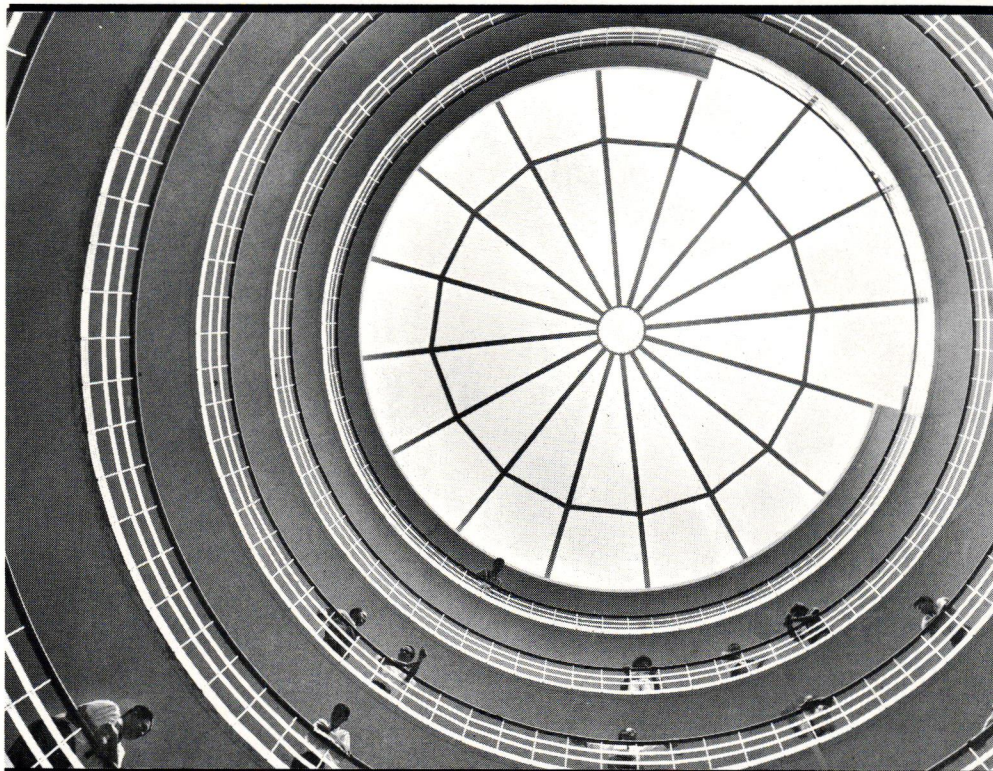
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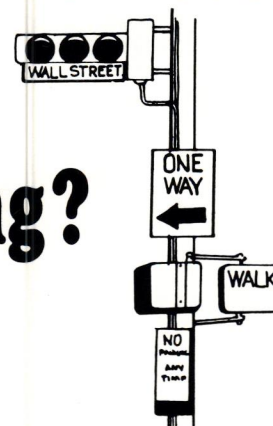


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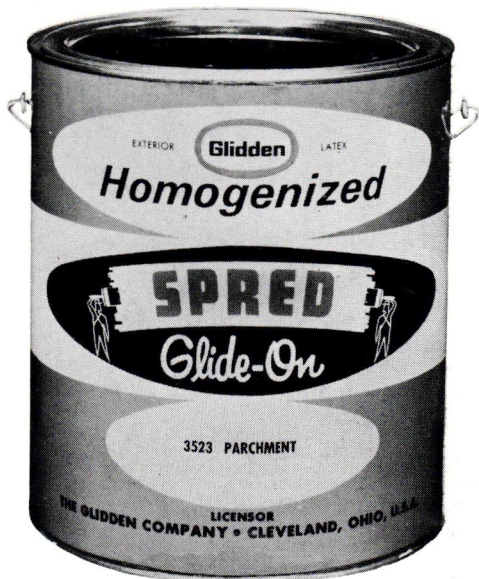
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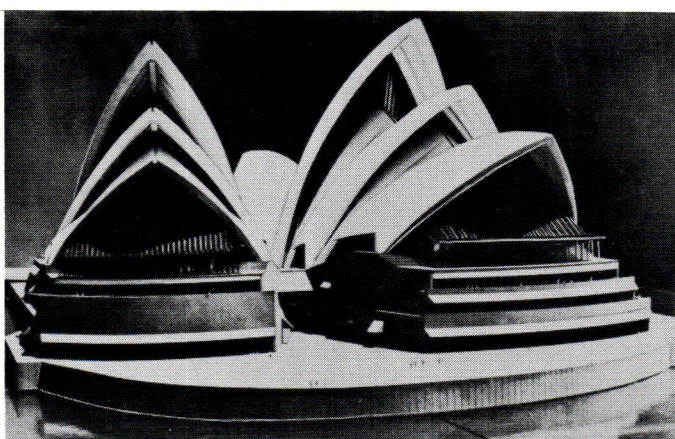


# Architecture Overseas

by T. A. L. Concannon

## THE SYDNEY OPERA HOUSE, NEW SOUTH WALES, AUSTRALIA

In an article titled 'The Sydney Opera House. What went wrong?' in the February, 1967, number of the Journal of the Royal Institute of British Architects, John Carter comments on the sorry history of this fascinating but unfortunate building, and offers some personal views as to why the architect Joern Utzon, who won the design competition in 1957, decided to resign his commission as architect in February, 1966.



*Sidney Opera House*

*Photo Australian News & Information Bureau*

## COMPETITION OF 1957

It has been said elsewhere that the competition jury should have included a structural engineer (all the members were architects — Eero Saarinen, Sir Leslie Martin, Professor H. I. Ashworth and the New South Wales Government Architect Cobden Parkes), nevertheless many people thought that Utzon's unusual solution was an obvious winner out of the 217 competitors from widely scattered parts of the world.

## AN EARLY START

A lottery was established in an appeal to get the project from the drawing board onto the ground, at an originally estimated cost of £A3.5 million (now expected to be nearer £A30 million!), and a contract for foundations and sub-structure was let in 1959, despite the advice of Utzon and Ove Arup, the consulting engineer, both of whom pointed out the danger of starting work before adequate office and site preparation. Utzon then worked in Copenhagen, Arup in London, and separate contracts were arranged between the client and the engineering consultants, and between client and quantity surveyor. According to Carter "in the desperate collapse of relationships that happened five years later" the New South Wales Chapter of the Royal Australian Institute of Architects were critical of the way in which separate agreements were made between client and engineering consultants.

## MINISTER OF PUBLIC WORKS

In 1960 the Minister of Public Works was established as the constructing authority, to whom the architect was responsible. He had also some responsibility to the Department of Local Government, and to the Opera House Executive Committee. Utzon seems to have had a resident site architect, and Arup was represented, until he set-up his own office in Sydney in 1962, by a Sydney firm of consultants. Later, after Utzon arrived in Australia, a works supervisor was appointed by the Minister.

## THE SITUATION ON THE JOB

Carter was told in Sydney in 1960 that drawings were being received only a week or two before construction, and that alterations were being made to the accommodation (to the chagrin of competition losers!). Difficulties arose with site conditions, including the discovery of unsuspected faults in the rock strata, causing Arup to comment later "the foundations should not have gone in until we knew about the shells". Astonishing as it may be, it appears also that Utzon and Arup did not know until after work had commenced that £A3.2 million worth of stage machinery had to be installed! As John Carter wryly comments — "clearly, where too many people are responsible, no one is responsible". Problems were met in design of the 'shells', which eventually were resolved by Utzon in designing all as sections of a sphere.

## RELATIONS BETWEEN ARCHITECT, ENGINEER AND CLIENT

Rumours that the likely cost would reach £A14 million startled the public in 1962, causing a good deal of comment in the local press. Carter suggests that all was not as happy as it might have been in architect-engineer relations by early 1963 when Utzon had an office in Sydney; working drawings were not always issued promptly from the architect's office, and there was a lack of project control. Relations between architect and the client committee appear to have been such that communication one to the other became difficult.

In an attempt to improve architect/client relationship, the Minister of Public Works called a meeting in August, 1965, with the President of the New South Wales Chapter of the Royal Australian Institute, also a member of the Chapter Council who was working with Utzon. Somewhat surprisingly, Utzon was not present. But a meeting did take place between Utzon and the President later, in September, 1965. Carter states that what took place at the meetings is not known, but that Utzon and the President met again on 1st March, 1966, two days after the architect had resigned.



## **UTZON'S 'RESIGNATION'**

During the period late 1965 to early 1966 Utzon is said to have been considering resigning, due to a combination of factors not the least of which was delay in paying his fees, and what he thought to be uncooperative attitudes and lack of respect for him. It emerges from John Carter's article that Utzon did not in fact intend to resign when he said "I will be forced to leave the job"; subsequently he denied that this meant his resignation.

## **PANEL OF PRIVATE ARCHITECTS**

Whatever had been his intention, the Minister had no doubts, and immediately decided that a panel of private architects would be invited to finish the job. This decision caused consternation in architectural circles in Australia and the world, with pro-Utson forces in Sydney forming an 'Utzon's-in-charge' committee after the Minister had put forward his Basis of Proposals for tackling the problem. These were that the Government Architect would take charge, with a panel of architects to direct various activities. In this scheme Utzon was to become 'Design Architect' responsible for "originating, supervising and development of design".

Utzon then informed the Minister that his letter of 28th February, 1966 was not his resignation, and concluded by proposing that he should be confirmed as architect-in-charge; this the Minister would not accept.

## **PETITION BY NEW SOUTH WALES ARCHITECTS**

There was much activity in government and architectural bodies and in the press; a petition was signed by 120 New South Wales architects asking that no architect should have anything to do with the Opera House job until a full investigation had been held.

It appeared that the Minister promised on the 28th March, 1966 to get Utzon to continue, but in April he was criticized for lack of effort to do so. On 27th April a special general meeting of the Chapter was held to debate the matter of Utzon's retention, and a telegram was sent to him urging him to "make this last effort for the sake of the Opera House". There was no reply.

The Minister then announced his panel of architects, whose task would be to finish stage ii (shells) and stage iii (interiors). In a newspaper story the Minister was reported as saying "every effort had been made to reach an acceptable basis for Mr. Utzon to return to the project with full responsibility".

## **THE ARCHITECT'S DEPARTURE**

Nine years after he had won an international competition with world-wide publicity, architect Joern Utzon left Australia, just two months after his 'resignation' had been accepted.

## **WHAT WAS WRONG — AND WHY?**

John Carter concludes his intensely interesting account with the question — "what is one to say of this melancholy drama?" He feels that the authorities in 1957 were wrong in refusing to accept the advice of Utzon and Arup to take

due time in building. He criticizes the architect however for not having prepared a clear programme at the beginning, adhered to his original brief and accepted the client's request for information and drawings. He believes also that an impartial enquiry should have been made concerning official complaints, and that the Minister should not have humiliated the architect, and been more ready to compromise.

## **ARE THERE ANY LESSONS TO BE LEARNED?**

What lessons are there from this almost tragic affair of the Sydney Opera House? What can be done to ensure that this sort of thing does not happen? In Jamaica we have tended to suffer from a fascination for what one might call 'date-itis', and for the client never, or hardly ever as Gilbert would have said, giving the unfortunate architect and his colleagues sufficient time to meet the date. Everybody has to work like mad 'around the clock' to get the job done on the appointed day, a day that more often than not has no sensible relation to the size and nature of the undertaking.

If we are to have a national, or international competition for a national theatre in Jamaica let us hope that something can be learned from the lesson of Sydney — proper competition conditions, a jury adequate to make the best assessment of the designs, and a full realization by the authorities that ample time must be given for preparation of working drawings and documents before work is started. The architect must be ready to do his part in keeping the job supplied with essential details, in liaising with the consultants and contractor, with government and local authority bodies, and generally as the leader of the team in ensuring that the finished building is a worthy result and a tribute to the combined skill and labour of all concerned.

## **THE CANADIAN WORLD'S FAIR, 'EXPO 67', MONTREAL**

On the 27th April, 1967 the Governor General of Canada officially opened the Canadian World's Fair, 'Expo 67', at Montreal to mark Canada's 100th birthday as a nation.

Set on an island in the St. Lawrence River the Fair is expected to attract some 35 million visitors from all over the world during its life of six months, enjoying the displays in pavilions of some sixty countries.

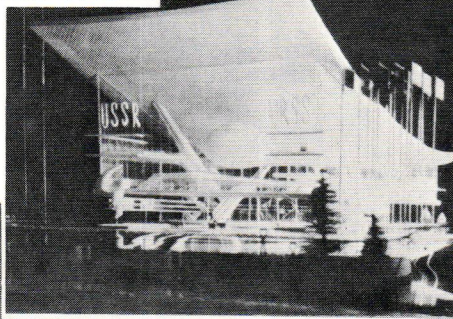
In the first number of this journal a short description was given of the African Pavilion at the Fair, which will be occupied by 25 countries. With due acknowledgement to the American Institute of Architects, the following is condensed from a critique of the exposition by A. J. Diamond, a Canadian consultant and associate editor of *Architecture Canada*, published in the February, 1967 number of the *Institute's Journal*.

## **SITE AND CONCEPT**

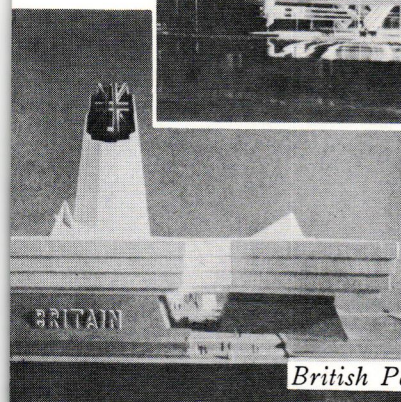
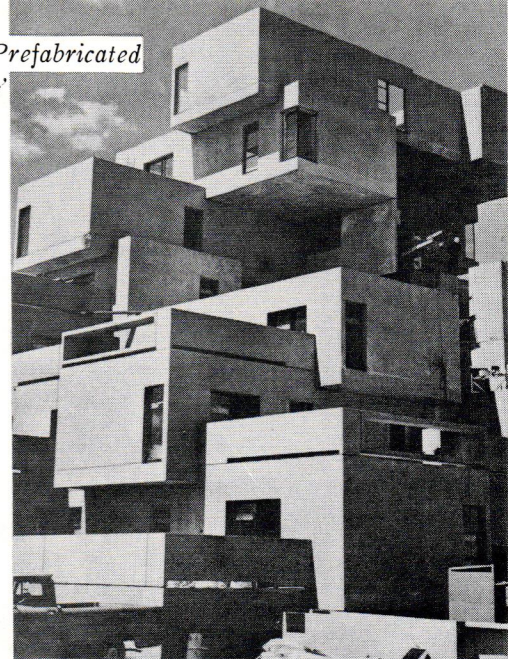
The author's critique ranges over the entire concept, from the superb island setting, systems of transport, individual structures and other items to street furniture (which, incidentally, he rates as of high quality), concluding by noting the absence of "some easily visible and identifiable symbol" to provide a sense of orientation (such as the Atomium at Brussels, the Eiffel Tower in Paris, and the Skylon in London).



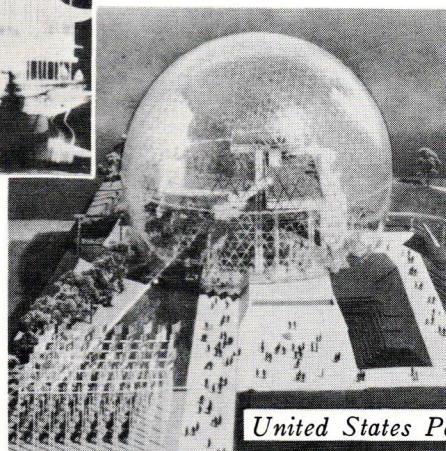
Russian Pavilion



Habitat - 17' 6" x 38' 6" Prefabricated units stack to form 'houses'



British Pavilion



United States Pavilion

Commenting that the Fair stands upon one of the finest sites in North America, and that the programme of operations has been well controlled by systems management methods, the writer remarks that 'Expo 67' in his view "fails to demonstrate the means to an ordered life. It has neither fully realized the potential of the systems it has employed nor used systems which would eventually do more than merely satisfy the demands of the exposition... The transportation system and the permanent structures could, and should have become, the framework for future development, once the impermanent pavilions are cleared away".

#### SYSTEMS OF TRANSPORT

The Fair covers about 1,000 acres, divided into four sectors by an existing park of 140 acres and channels of the St. Lawrence River. There is a system of transport to the four areas, providing both ground and higher level views of the site.

Expo Express, the main line, straddles the site with a ride 'for free'. There are three intermediate stations placed between the main gate and the amusement centre (La Ronde). Adjacent to the intermediate stations stand the theme pavilions, built by the Canadian Corporation; these, with the Express railway stations form the focus in their areas.

Secondary systems of transport are accessible to these focal points; between are the service areas with restaurants, snack bars, washrooms et al leased to private operators.

#### THE THEME PAVILIONS: "MAN AND HIS WORLD"

The theme pavilions are temporary (a word we have come to distrust in Jamaica); the critic believes that their "designs should have made them distinctive and closely tied to movement channels". He continues to observe, "In fact it is only their position that distinguishes them from the diverse collection of other pavilions. And even then it is only a matter of their proximity to, and not integration with, the train stations". He thinks that these pavilions should have been used as "permanent points for the future, utilizing them as potent linkages to other structures and activities..."

*Expo Photos — Courtesy of Design Jan. 1967*

The secondary transport facilities, running at a lower speed, include a 'minirail' (narrow gauge?) track on Ile Notre Dame and on Ile Verte, a trailer in Cite du Havre, and a skyride in La Ronde; there is also a canal boat system.

#### VEHICLE PARKS AND BOAT HARBOUR

Buses and motor cars also provide fairground transport, with vehicle parks linked to the main system outside the site. There is connection with the Montreal Metro from Longueuil, and a heliport connects with Montreal's International Airport. A permanent feature will be a harbour for 250 boats at La Ronde.

The author expresses his view that although 'Expo 67' "has used water as an element of the physical environment" nevertheless this, like the transport, system, has not "served to affect qualitatively the designs of adjacent structures. It is still an exhibition which happens to be near water..."

#### INDIVIDUAL PAVILIONS

Space is insufficient in this short note to review in detail the author's descriptions of individual buildings, which cover a multiplicity of shapes and arrangements. It is however interesting to note what he calls the 'bugaboo' that industrialized building "must of necessity produce a monotony by the repetition of standard components is clearly dispelled" at Expo 67.

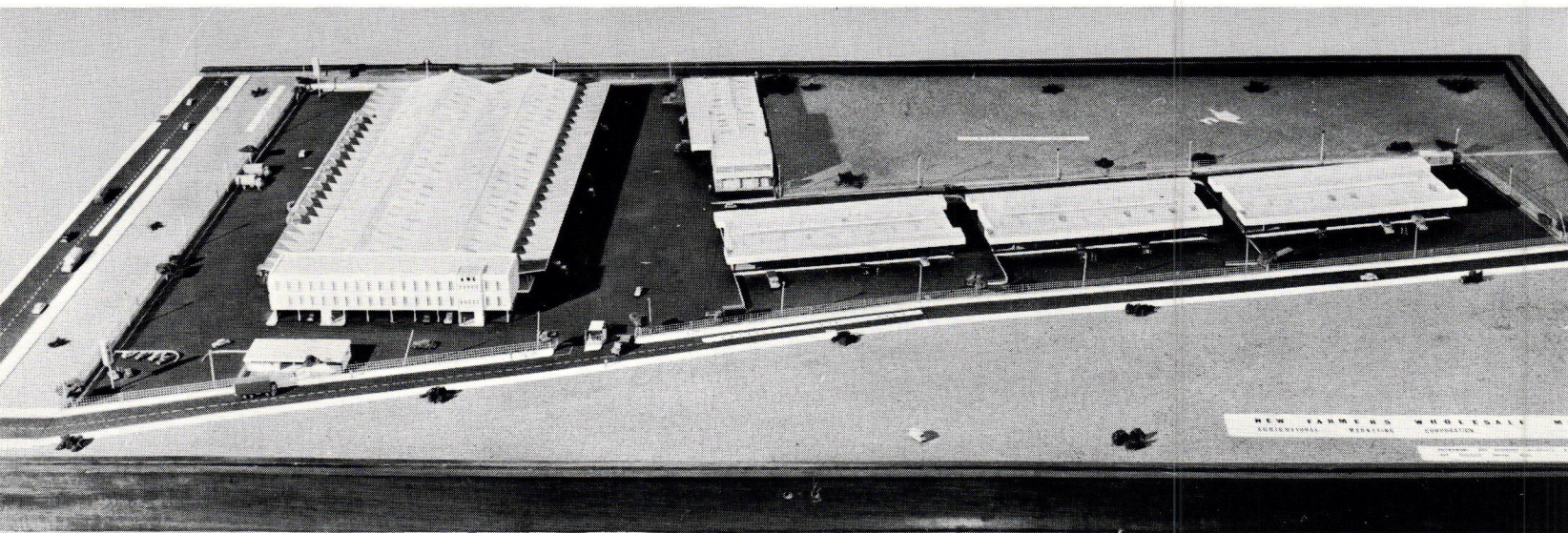
A. J. Diamond's informative assessment is a valuable introduction to Expo 67. Visitors from Jamaica will naturally gravitate to their own country's pavilion, even though they will perhaps be disappointed that its design was not entrusted to a Jamaican architect.

It is a thoroughly stimulating, if tiring, experience to make the pilgrimage and 'doing' an exhibition staged on such a vast canvas as this Canadian World's Fair. But it is an experience well worth the effort, if one is fortunate enough to have the time — and money — to be able to do so. *(Grateful acknowledgement is made to the sources quoted)*

T. A. L. Concannon.



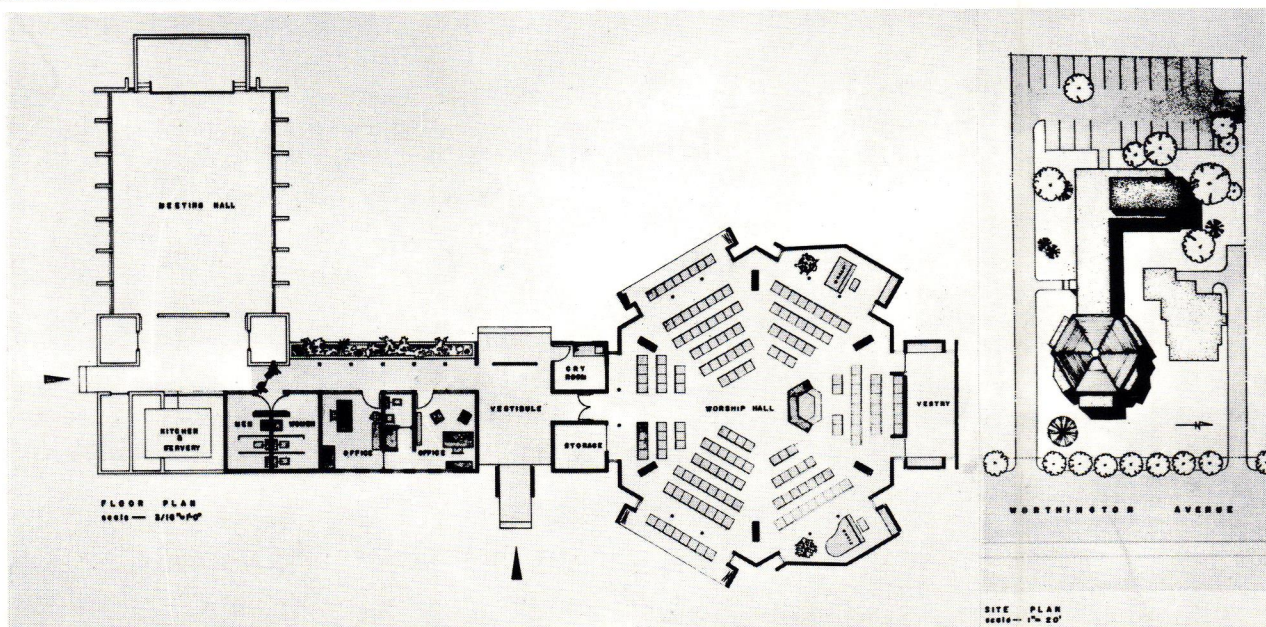
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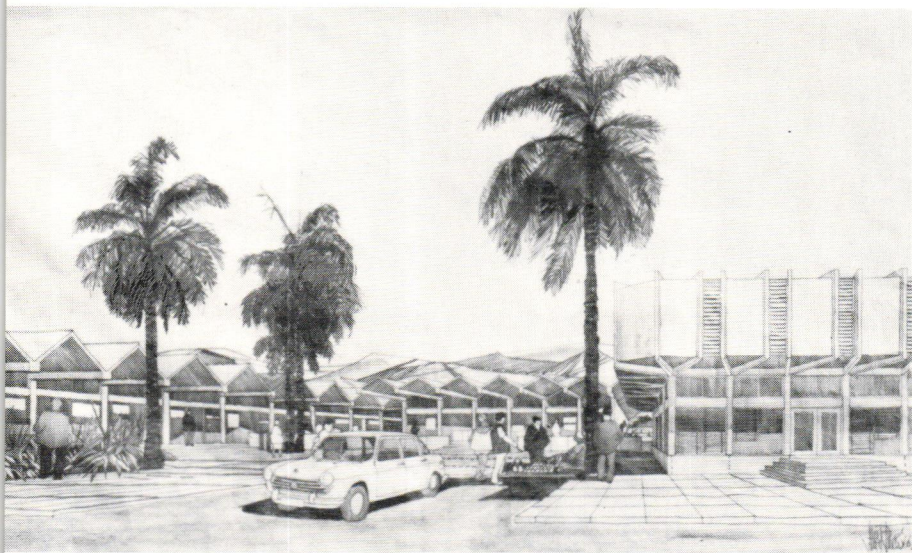
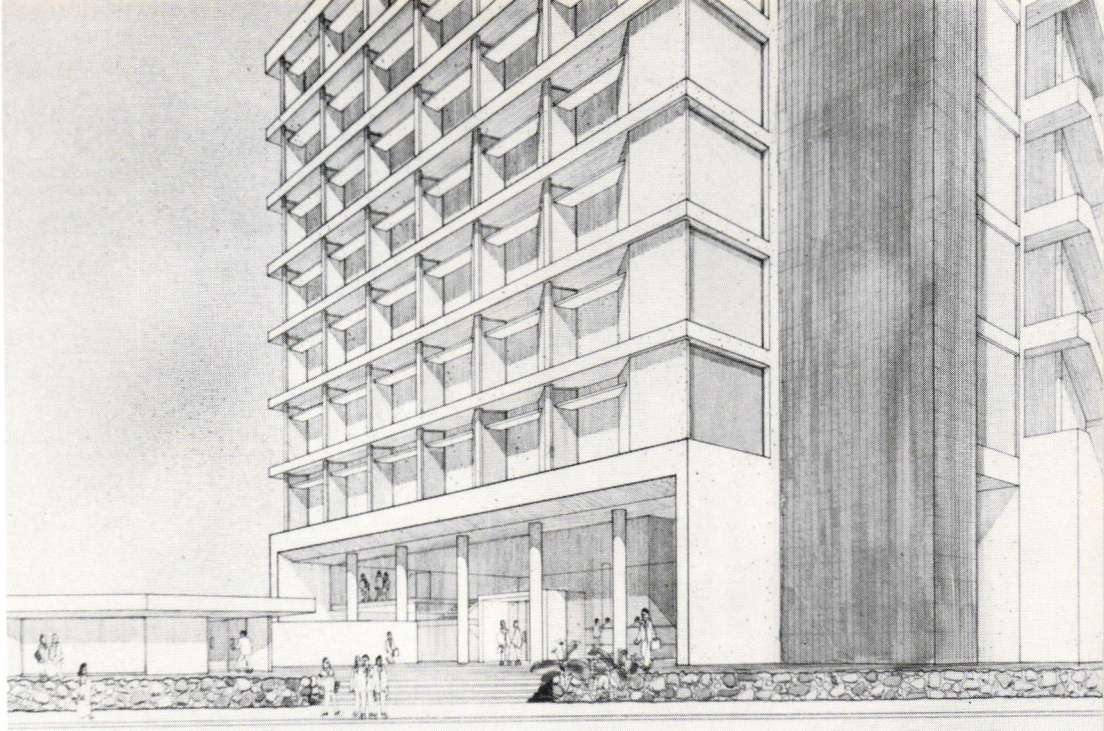


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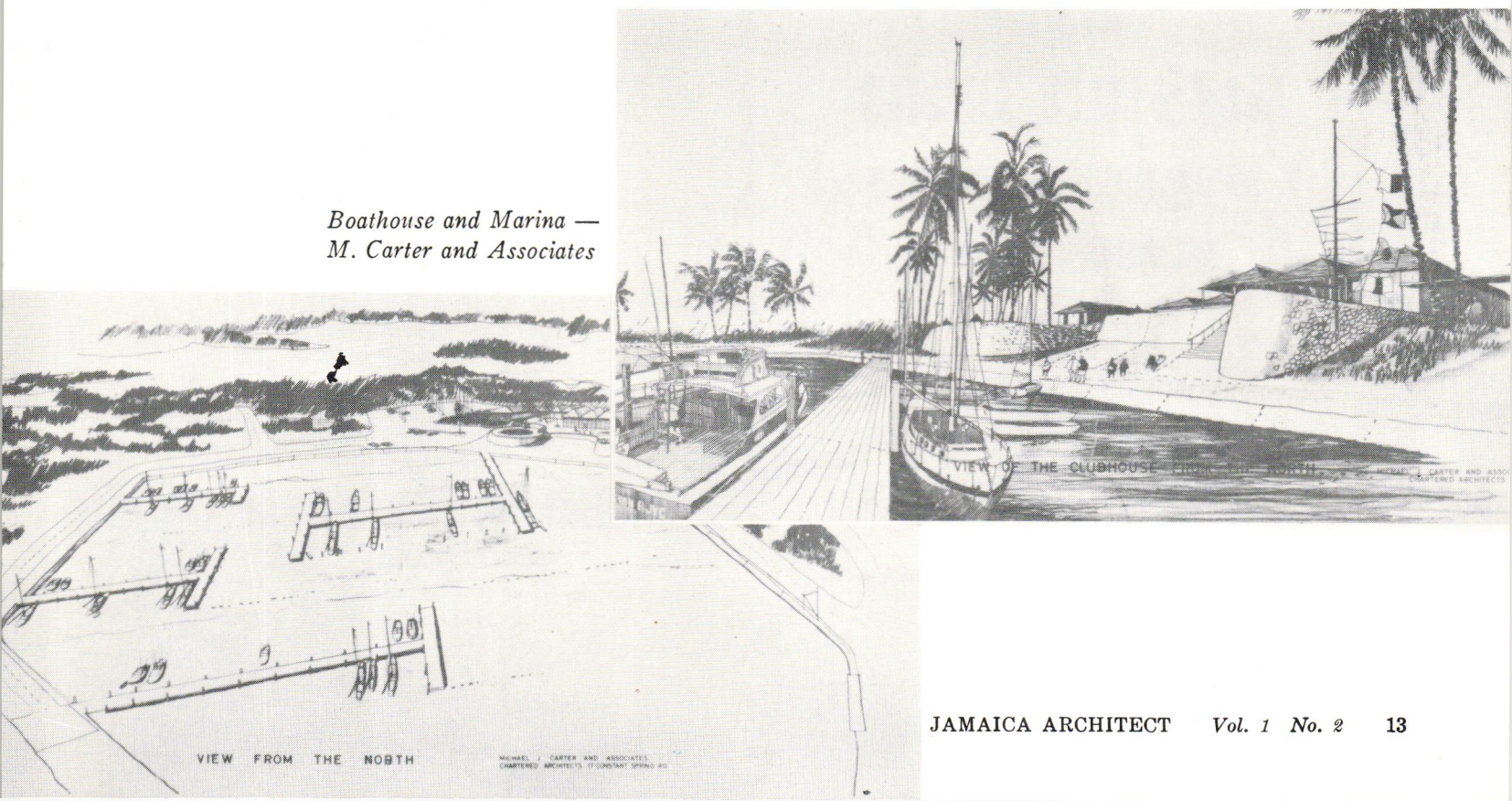




*Office Complex —  
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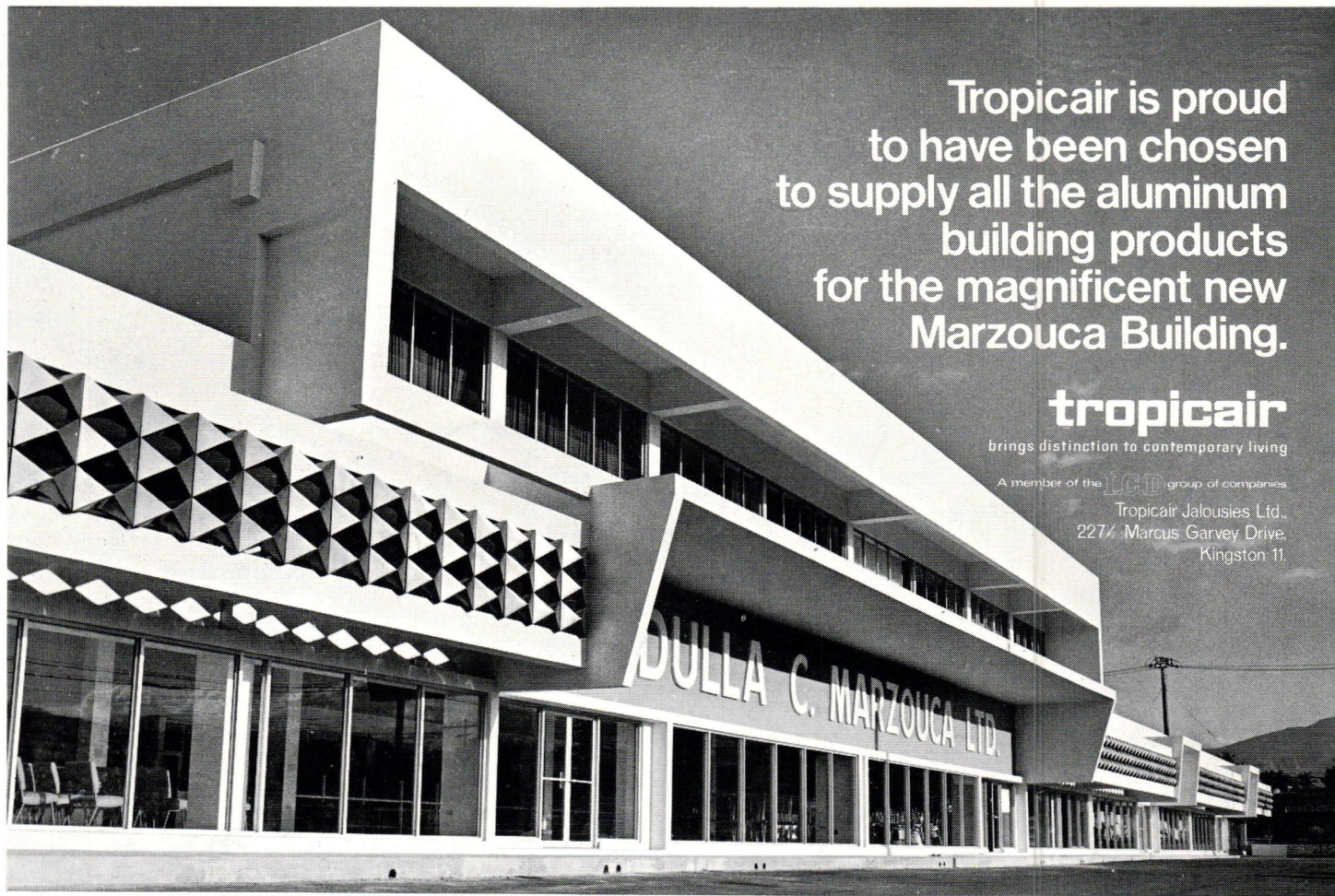


*Discovery Bay Shopping Centre —  
Caribbean Planning Associates*



*Boathouse and Marina —  
M. Carter and Associates*





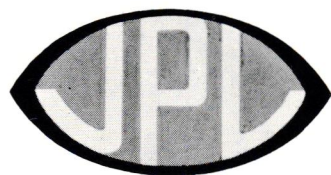
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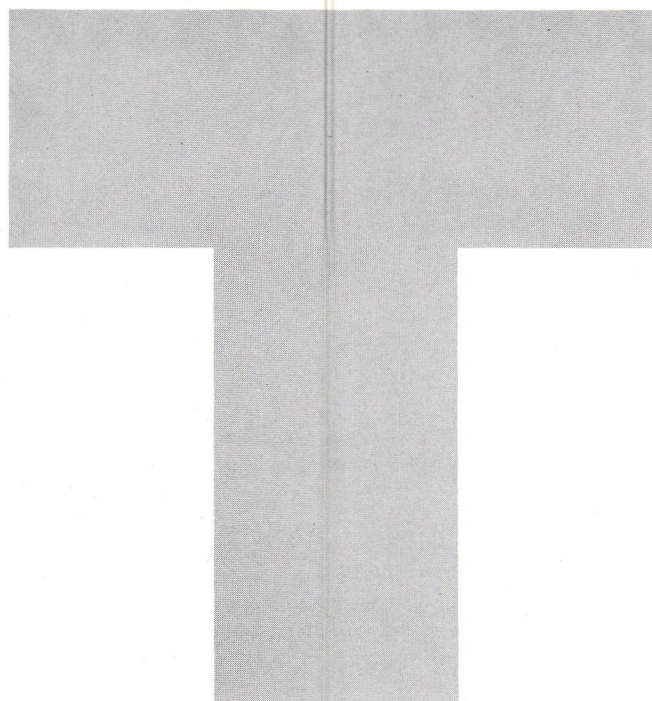
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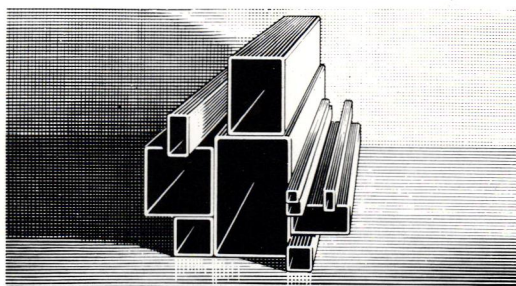
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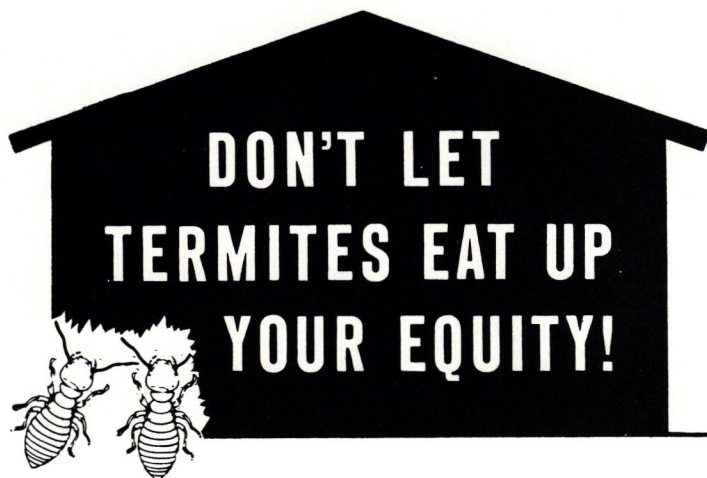
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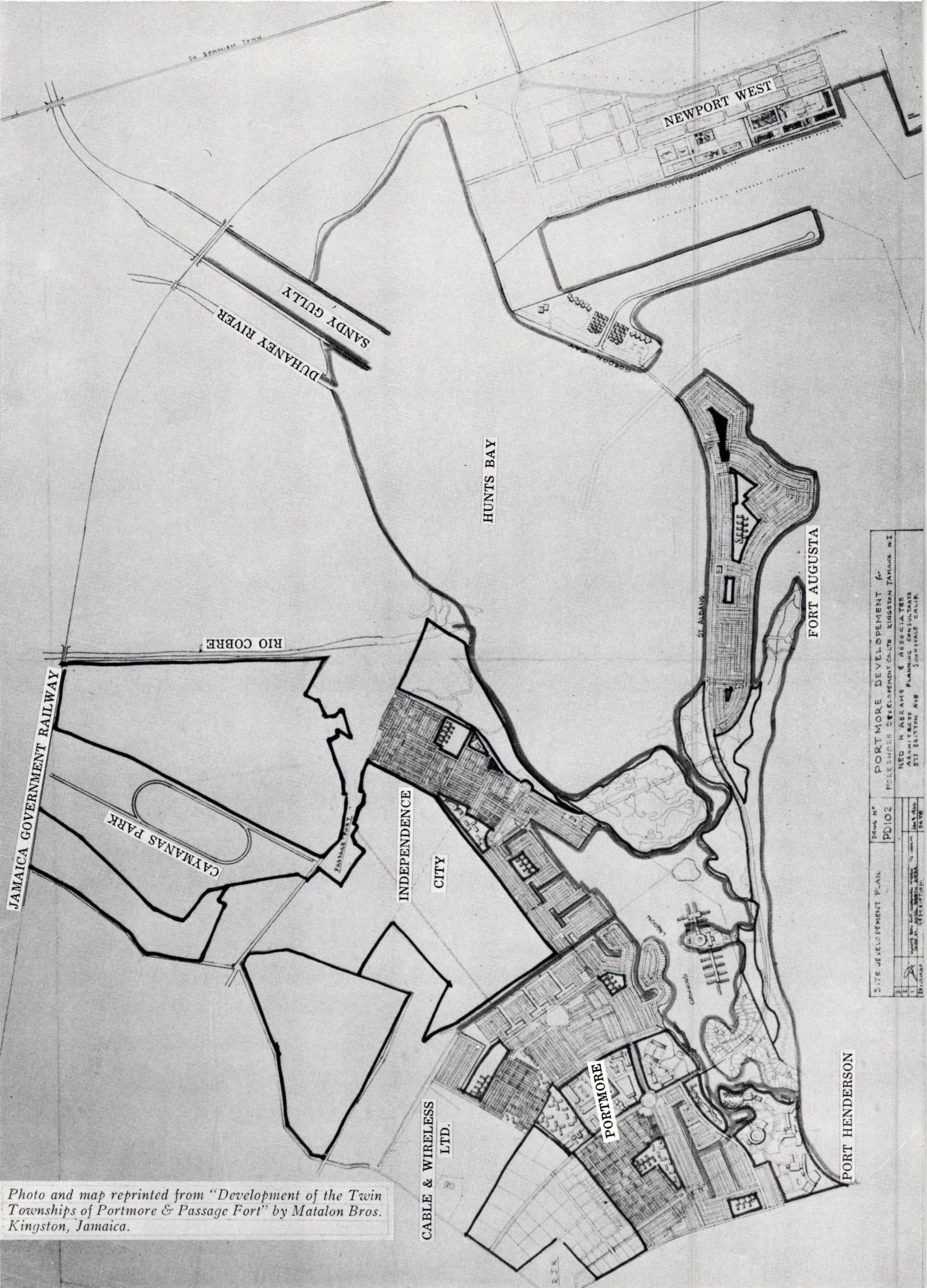
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2	Site Plan	2	NEO H. ABBAMS PLANNING ASSOCIATES
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4	Sectional Elevation	4	ST. ALBANS
5	Sectional Elevation	5	ST. ALBANS
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Photo and map reprinted from "Development of the Twin Townships of Portmore & Passage Fort" by Matalon Bros. Kingston, Jamaica.



# PORTMORE

## Dramatic Opportunities in Urban Development

*by Tony Gambrill*

Since the completion of the Mona Heights subdivision nearly ten years ago, Jamaicans have become accustomed to announcements of large residential schemes, some containing over a thousand units or more. These have been developed primarily to provide housing for low and lower middle income groups. In each case, to varying degrees, social and commercial amenities were taken into consideration by the developers.

Three of these schemes — Mona Heights, Harbour View and Duhaney Park — were undertaken by the principal innovators of the development plan for the twin townships of Portmore and Passage Fort currently being examined by Government. The experience gained by this group — particularly in respect of mass production construction techniques — will prove useful in the execution of this latest proposal and should contribute to impressive economies. However, the environmental considerations, which received limited attention in the earlier schemes, will be magnified enormously in the new development.

Problems, for the Architect and the Town Planner, are often opportunities in disguise. And Portmore offers the most dramatic opportunities ever offered in Jamaica's history for socially-dynamic urban development.

Let us first look at the project as described in the developer's brochure, an exciting if limited document, which contains the only information presently available to the general public. It is understood that the plan has been revised and modified and that the proposals before Government may vary in certain details quoted here from the brochure.

"The proposal is to expand the city of Kingston westwards to the Hellshire Hills; this plan, to be executed by private enterprise, proposes the establishment of a "New Town" of 30,000 homes for 150,000 people with all the necessary ancillary facilities. The development would provide 10 miles of new residential waterfront and would turn the present swampy Dawkins

Pond into a 300 acre boating lagoon with resort and recreational facilities and extensive seaside park areas. Hunts Bay would be turned into a sheltered lake, 3 square miles in size, and would open up vast new possibilities for industrial, commercial and resort developments".

The above is the introductory page of the 20-page illustrated brochure detailing the proposals.

This new development will leave the agricultural land of the Caymanas Estates intact and concentrate on the unproductive area east of Port Henderson. In addition it will provide a gateway to the intended Hellshire Hills development.

A new causeway spanning between existing outcroppings of land and new land fill will give quick access to the city centre via Marcus Garvey Drive and will put this new town closer to the present work areas than the foothills of St. Andrew.

This rapid link will tend to accentuate the expansion of Kingston towards Spanish Town and will speed the eventual amalgamation of the two cities.

The social implications — on a national level — of the westward growth of the city of Kingston are immense. It is easy to see that Portmore, as impressive as it is in its own right, must also be evaluated as a phase of a far more complex Kingston — Spanish Town regional development. Planned regional development should be considered prior to the start of Portmore and, in fact, must impose its characteristics on the Portmore scheme in order to ensure conformity. With the resources that it has at its disposal, Land Development Limited (the Portmore developers), could contribute profitably to a partnership with Government authorities concerned with such a masterplan.

The Portmore proposal can provide a solution for rational and economical construction of large numbers of housing units. It comes at a time when available land in the





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Liguanea Plain and St. Andrew Hills is being subdivided into small expensive plots uneconomical for residential developments and unsuitable for high density housing due to the lack of sewerage. By creating 30,000 homes or space for 150,000 people within five years, the twin townships will finally make a dent on the housing needs of the Corporate Area. Unfortunately, to some extent, by solving this problem, migration to the capital will tend to increase. Only Government's vigorous pursuit of its programme of rural industrialization and improvement of agricultural prospects can counter-balance this trend.

The possibility of creating a new city free from the defects and drawbacks of a traditional community has always been the dream of architects and planners. Old mistakes, inadequacies and missed opportunities can be avoided with the application of imagination, foresight and a sense of continuity.

It is understood that within the framework of an overall plan — which sets out the main types of areas such as residential, educational, commercial, industrial and recreational — actual developments will be undertaken by many different developers. This will be done in land parcels of various sizes. Hopefully the plan will permit a diversity with discipline which can perhaps define the more successful urban development of the past or the present. This would require also the individual developers to respond more effectively to the environmental requirements of Jamaica rather than the textbook and statistical criteria of "developing urban societies".

The development of Portmore by private enterprise and capital permits the use of private investment capital in the main urban area where this type of capital is inclined and willing to go, releasing Government funds for use in developing the other urban and rural areas where it is difficult to attract private capital.

This encouragement of private enterprise, if promoted within the framework of an overall nation-wide develop-

ment plan, allows the most extensive use of available knowledge, talent and capital.

This fact, of course, has been accepted as desirable for some time. However, the area in which there is a certain degree of uncertainty is the responsibility of the private developer for the total integration of the township as opposed to a housing subdivision. It is in this area, though, that Portmore could offer the most dramatic opportunities.

There are a multitude of factors that must be the subject of careful appraisal if Portmore is to be a worthy example of contemporary urban development equal to the most demanding international standards. The plan as outlined in the brochure cannot be subjected to close scrutiny in this respect because its ultimate scope is not known.

Whilst the physical health of a community is secured by the provision of drainage, public utilities, sewerage, access roads, street lighting and standards of building, the developers will need to closely study what might be described as the "mental health" requirements of the proposed townships. Is vehicular/pedestrian segregation exploited adequately? Do children have convenient recreational and educational facilities? Will lack of privacy, monotony of layout or the high density of dwellings create alienation and frustration? Will the resort area facilities serve all inhabitants? How elaborate will the commercial areas be? Can the proposed industrial estate provide employment for a substantial number of people?

Portmore is not a housing scheme, but, in fact, the nucleus of a new city. This scheme, as one facet of the expansion of Kingston, offers challenging opportunities for the developer, planner and architect to cast out wattle-and-daub thinking once and for all. In executing this project Jamaica can draw from a wealth of international knowhow, and potentially, contribute from her own experience because Portmore essentially is an ambitious undertaking of intricate complexity.

## *A Personal Commentary on the Portmore Scheme*

*by Peter Soares, Architect*

*The proposal to develop Portmore presented in this issue is a major undertaking; in its entirety it will be the first and greatest urban project in Jamaica, and with the projected expansion scheme towards the Hellshire Hills, it will eventually create a new city of the size of Kingston. Thus, Jamaica will be committed to having two cities in close proximity to each other on the Eastern side of the Island.*

*The scheme comes at a time when it is clear that major decay is taking place not only in older areas of Kingston, but even in luxurious residential sections. Physical deterioration can blight the appearance of an area in the short space of two and a half years. This decay is not only evident in Kingston but in all the major urban and rural communities of Jamaica. Therefore the background of the scheme needs careful study as it raises a number of absolutely vital questions — questions which must be posed because the*

*answers will shape our physical, economic and social environment for the next fifty years.*

*The scheme is really a regional planning application to develop a township but the projected growth of this new area adjacent to Western Kingston could lead to a population structure of at least three quarters of a million people. The scheme cannot therefore be judged in the normal isolation of a housing project because a city of this size will embrace the elements of providing work, food, shelter, and space for leisure. Each creates its own interdependence but over the years it has been agreed that in terms of planning, housing should occupy the marginal lands with agriculture and industry taking priority. Leisure, the new dimension in modern life, also dominates housing in terms of priority for choice land space by the nature of the amount of jobs and capital created by this expanding industry. Growth and expansion of all sections will be necessary.*



Finally, all these factors must be viewed within the national structure in order to begin to formulate a pattern of land use and development structure related to the real background of this Island.

Physically, Jamaica is not a country comprised of only urban centres. It is a country where the majority of people live in areas of rural underdevelopment and it is a country where the physical elements of hill land, level land and water combine to influence its growth. Most of the development which has taken place has been based on primary patterns of agriculture and trading. Viewed in its natural setting, one of the needs of Jamaica is to counter the massive imbalance in population distribution. This will lie in the development of our natural resources to the maximum, including the allocation of land for agriculture, industry, housing, leisure. Kingston and St. Andrew are at present built on the most fertile agricultural lands as are most of the urban centres in Jamaica.

The development of Portmore accepts the continued spread of Kingston. A sprawl of this magnitude, could result in the natural formation of two cities side by side — a 'new Kingston' and an 'old Kingston'. Do we have enough capital resources in Jamaica to afford the development of a new city together with the massive urban renewal that will be necessary for the decaying town? Will one of them become a ghost town?

The pattern of development for the city of Kingston and for that matter the whole of Jamaica, must be crystal clear. Should Kingston continue to expand to the west, the East, the hills and the sea? Are all of these routes of expansion necessary? The present pattern could create a chain of development all along the sea coast.

The centre of Kingston is shifting with the expansion of the city and the proposed locations of new development, (e.g. Downtown Kingston and Portmore) may be outside of the real pattern of growth. The main area for shopping may be much nearer the centre with resort development

along the sea coast and housing in the hills. On a national level, the accepted concept of where the future centre of Jamaica will lie, could be questioned. Montego Bay, May Pen and Mandeville are towns of fantastic potential. Jamaica has already had two capitals in its short history. Portmore has to be studied in terms of its regional and national setting.

The traditional pattern of filling housing needs for industrial expansion has created the worlds largest slums: London, Manchester and Birmingham (which is now, after seventy years, being revitalized). A developing country has no place in its history for historical mistakes, however, at the same time we urgently need development — but development related to the physical criteria of proper land use: flat land for agriculture, industry and commerce; sea coast for resort development; and hill land for housing, schools, etc. could establish fantastic growth channels based on the right ratio patterns.

One culture could develop based on this national land use. The graph of development up to the year 2,000 will need the most modern ideas available. There should be more massive development techniques formulated by the Government. Since change may effect a major shift in the internal development of the country, Government must give a lead to Developers and from that lead natural expansion will take place. Factors of urban renewal as opposed to new development must be considered. Physical patterns of housing on flat land areas need to be evaluated carefully. The incidence of decay in these areas is too high and too rapid to shrug off lightly. Much of the recent development in Kingston, including the coastal areas, is not modern. It was in many cases thirty years obsolete at the time of completion. New techniques of legal administration in land sale should be implemented so that future redevelopment and change can take place. The lease-hold structure of land must be considered.

None of these factors can be correlated, however, until a national framework is evolved.



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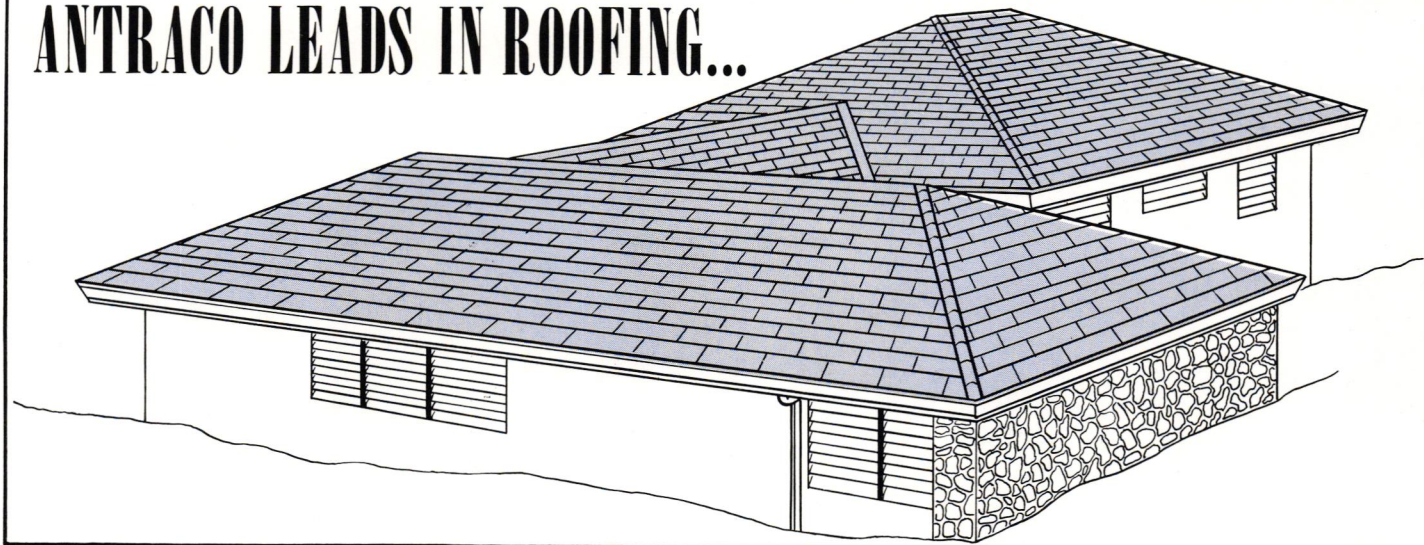
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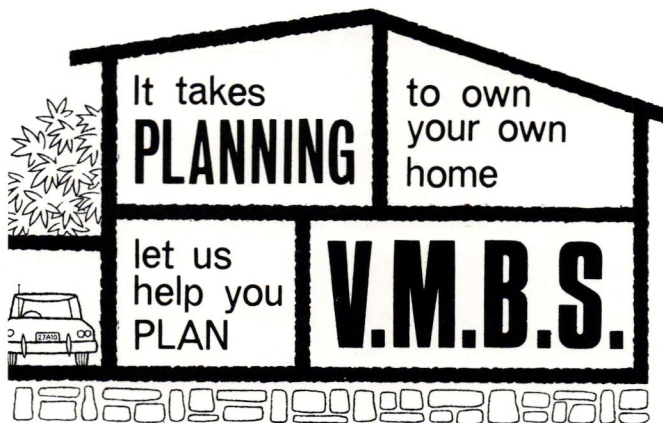


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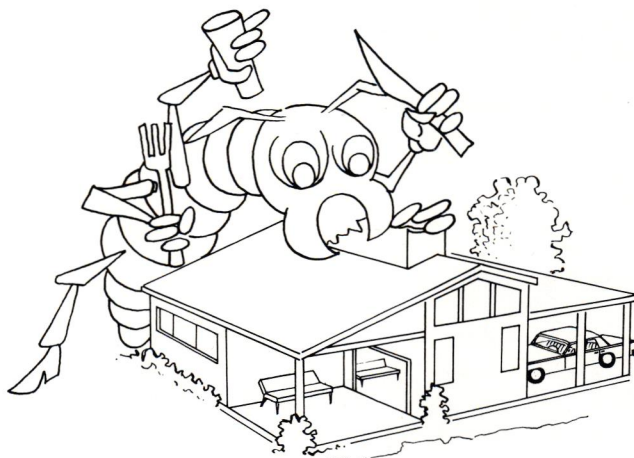
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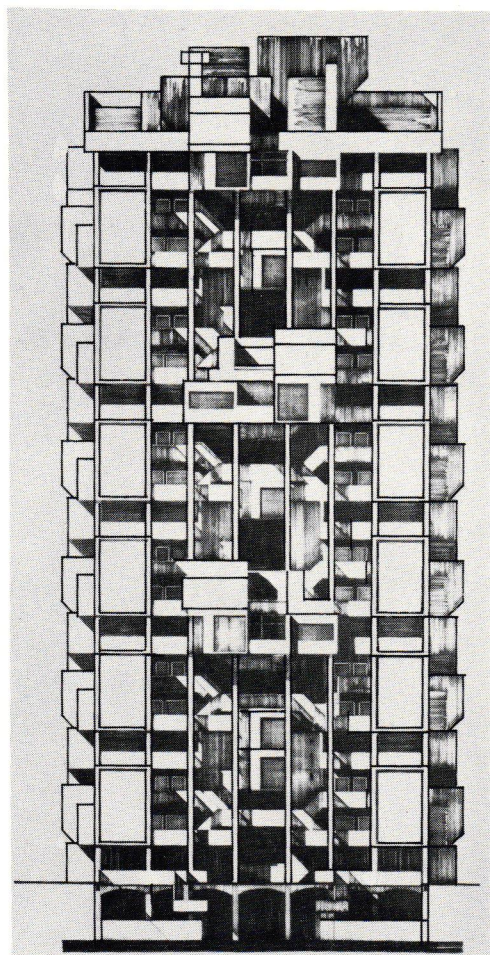
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# THE ENVIRONMENT OF CHANGE

*by John Martin*

In a recent issue of TIME magazine, the page opposite that on which the successful lunar landing of U.S. Spacecraft SURVEYOR 3 was reported, carried a brief article on the findings of two French biologists. The two scientists, Francois Jacob and Jacques Monod, apparently as long ago as 1961, produced a working hypothesis on the secret of genetic control. Now, says TIME, "Harvard University scientists have provided direct laboratory proof of their findings."

The relevance of this biochemical discovery to man's environment is shatteringly this: that with genetic manipulation a reality, it may be simpler, and more desirable, to tailor man to the environment rather than environment to the man. Thus, we might create a cold resistant strain of human beings for arctic habitation or, through the control of anti-body rejection, we might equip man with foreign organs such as an external gill which would allow man to live and work underneath the sea on equal footing with the fish.

This sort of extrapolation is no longer the stuff of space comics and science fantasies, it is feasible fact, born of our present technologies and merely one of a multitude of projections that we are now capable of making on man's changing way of life.

The most bewildering characteristic of to-days civilization is that things are happening faster and faster. The rate of change in every aspect of living, originally so slow as to be unnoticed, is accelerating astronomically, almost frighteningly. We can no longer measure it in terms of generations — change has become for us the dominant, influencing force under which our lives must constantly be adjusted and re-grouped.

The trend curves of this modern phenomenon show rates of acceleration (for the future) which underline the unprecedented nature of the changes to come. What happens in the next thirty-five years may well be more of a change than has occurred in the whole history of man on the whole earth.

From the beginning there has always been change. Since the first blob of life floated in the warm primeval, soupy, seas, changes have been taking place, inevitable mysterious developments that have given us our present life forms and the complicated interrelated patterns of our current existence. The peculiarity of man is that he has the power to occasionally bring about changes by acts of his own will, and thereby orientate the direction of human development. Recent human history has seen an incredible growth in man's ability to bring about change. In a scant few hundred years, and more abruptly, within our century, the whole pace of human development has been stepped up on an ever escalating scale — but the transition has been so swift and its effects so pervasive that for the most part, our attitudes are still framed by the thousands of years of contrary experience.



The cumulative effect of such rapid change in so short a time has produced a traumatic condition in our awareness of the consequences of change. Our perceptions are numbed and as a result the natural evolution of peoples and societies is confused. We have not yet fully learned to recognize the difference between letting changes occur and choosing the changes we want to bring about.

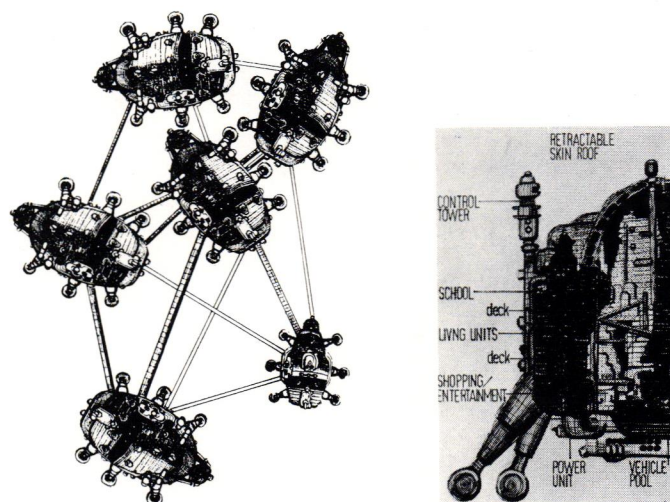
That man possesses the ability to instigate and bring about programmes of change is a realization of our age. To launch a manned space vehicle to the moon has required a ten year period of advanced preparation. Governments and Industries alike, instigate programmes of long range development. We start to think in terms of pre-natal care, child welfare and education, which may not pay off for twenty years. Independent investment in specific scientific and technical development programmes is unprecedented, as evidenced by the 'Arms Race' and the 'Race for Space'. Industry has become increasingly occupied with the markets of the 1970's and 1980's and so on. But these instances of awareness of our ability to bring about change are almost totally uncoordinated. Our main emphasis is on the technological and social strategies for re-fashioning the particular without reference to the whole. When we speak of change we remain parochial and indifferent to its real meaning. We blindly insist on regarding the plethora of modern change in the narrow light of man's past historical experience and not for what it truly is — the ultimate revolution. Within this ignorance there is an implied and sombre threat. Science is readily diverted to the anti-human and it is indicative that our new found abilities have mainly been used efficiently only for military purposes.

When we refer to the iniquitous imbalances within our civilization, occasioned by this attitude, such as the multi-billion dollar journey to the moon while two thirds of humanity live in conditions of deprivation and misery, we see a curious paradox of the effects of change. One that could in fact show enormous dividends for the whole of humanity if our sense of awareness were sufficiently altered to its advantage. In space work, society (or a specialized part of it) has organised itself to analyse the problem, marshal the resources and see through to completion a hitherto seemingly impossible task. Society now has a record of success, and with this kind of experience we can now take on other grand tasks which earlier man saw as being needed, but

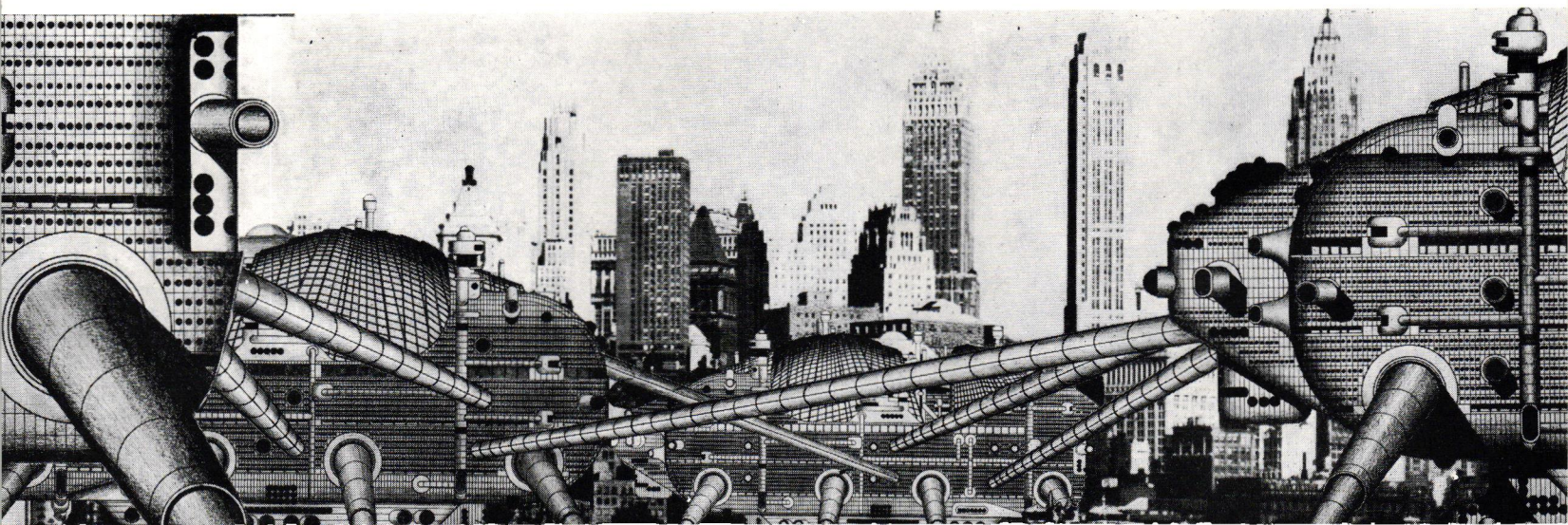
possessed neither the boldness nor the engineering and organizational tools with which to undertake them. We cannot afford to let the only result of the space programme be better baking dishes developed from rocket nose cones.

Changes in the basic behavioural patterning of institutions and individuals are inevitable for our forward development. They are the result of our rejection of the old mores, through expediency, necessity or intelligence. But those who claim that change is synonymous with progress, as many would have us believe are surely as wide of the mark in their advocacy of change as were the Luddites in their pathetic opposition. Change is disruptive, its trends are diverging in many directions, some of them self limiting or even self destructive — think of the trend towards explosive population increase, supported by the changes in modern medicine, to over-grown cities, to traffic congestion, to the reckless exploitation of resources, to the widening gap between developed and under developed nations and private affluence and public squalor, to over specialization, monotony, boredom and the pollution of our atmosphere and water through industrial growth.

But these manifestations only seem to bear out the central point that the environment and form of our society is within our control, both positively or negatively. That we seem to have consistently chosen the negative approach shows that these forces of change are being brought about by an unprepared and indifferent people. Clearly it becomes



*A Walking City Project by Roy Heron & Brian Harvey.*



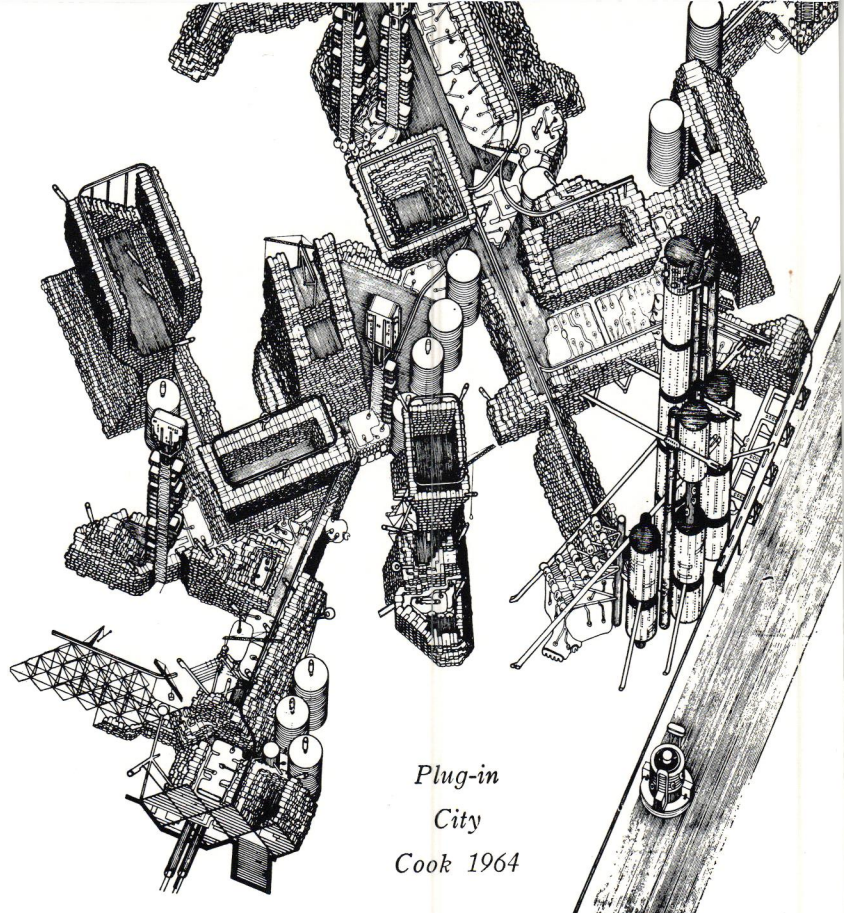


imperative, therefore, for us to attempt to gain insight into the nature of the tools which can effect our environment and the emerging society which will use them.

The forms of human environment have always shaped people and societies, and the environment of civilized man has always been a clear measure of the state of his society and achievements. So it is today. The shock waves of change are breaking open the fabric of our environment and our inability to meet their increasing impact with our traditional tools shows in the confusion of our environment. That environment, today means built environment, and some kind of family dwelling, is a fact of 20th century life. That artifact of civilized living, — the city, is to-day a focus of the confused environment. In the last half century more and more metropolitan areas have grown to monstrous size, up to 12,000,000, 14,000,000 even to 16,000,000 in Tokyo, Greater London and greater New York. The number of cities with over one million inhabitants has grown from 30 to 80 in the last 22 years — and the population of automobiles is growing twice as fast as that of people. As a result, cities are suffering from traffic thrombosis and their inhabitants from severe vital frustration. City life to-day is directly linked with mass mental disease, growing crime and eruptions of mass violence.

We are faced with the growth of an urban environment of unprecedented dimensions and our lack of control is resulting in the hideous unplanned spread of 'slurb' — a compound of slum, suburbia and urban sprawl, which is blighting so many of our urban settlements.

The total human environment is a complex composition of all human activities and the conditions in which they function, the activities of our houses and our hospitals, our schools and our shops, our factories and our fun-centres are all subject to the pace of change. Our changing ways of life put an incredible burden of responsibility on those of us who see as our responsibility the task of maintaining the environment. For we must see as our task not merely the maintenance of a tolerable environment, but the creation and continuous renewal of a life-enhancing one. Unfortunately the predilection of Architects and Planners has been, and is, largely to-day, disposed towards the maintenance of a static environment into which change is regarded as an intrusion. Society has long seen the architect as a fashionable figure who revels in the immensity of his own visual dexterity, his aesthetic sensibility and his sense of spatial awareness; and the Planner as the creator of a framework into which the artifactual droppings of the Architect are arranged. It is sad that many Architects have been taken in by this view of themselves and consistently turn out tight little three dimensional packages of ammunition for their critics. We may be, to a certain extent excused for this, since along with the rest of the society we serve, we have been caught unawares by the innovation of change. Society's view of our role has been limited and consequently so has our participation. From our standpoint, faced with the inevitability of change, the future of architecture cannot be distinguished from the overall development of environmental control. Whether we change and somehow retain our controlling function or merely become absorbed is up to ourselves and the actions we take now.



*Plug-in  
City  
Cook 1964*

That all of us, not least Architects and Planners, have to become more aware of ourselves in relation to our changing society, is a prerequisite of human progress. But for us this awareness has to be translated into understanding, which in turn must be converted into action.

Many of the new constraints have already been activated such as drive-in cinemas, mobile homes, cars that turn themselves into boats, supermarkets with doors that open as you walk up to them, wear and throw away clothing, 600 mph jet travel, teenagers, television computers, submarines and gadgetry. It is for us to control the eventual direction of this emancipation. Children who have been brought up on space travel and bright colours, washable plastics and throw away handkerchiefs will demand a different way of living from the one we are providing for their parents. We design and build homes to-day with the traditional constraints of pressed mud and daub and the two inch nail, while at the same time clothing is being sold in Britain that offers amenities and comforts lacking in a great many buildings.

Our traditional attitude to the home as a place in which only half a dozen activities are practiced, of which eating, sleeping and sitting are generally the only ones provided for, must extend. To most of us the television screen is the limit of a changing environment in our homes. Our motives for the way we design our homes are conspicuous by the resemblance to those of yesterday. The style of furniture may be different but all too often it is basically the same old 'three-piece' in another disguise. When every other dimension of the space in which we live is undergoing change it appears more than unwonted conservatism that we should continue to hold off the opportunity to make the intimate environment expressive of the great range of choice that is offered by our changing age.



If it is now possible to build and make almost anything, we should surely begin to rethink on the usefulness and appropriateness of most of our dwellings for the real use and activities going on within. The slide show has replaced the family album and we can replace the memories and images of yesterday by photographs and films. It is only an extension of these to conceive of a 'living-room' that could simulate by colour, sound or projected images, any atmosphere one required simply by throwing a switch. On a more immediate level, we are able to create a room that can adapt for several requirements by the change and extensibility of walls, floors, or appliances.

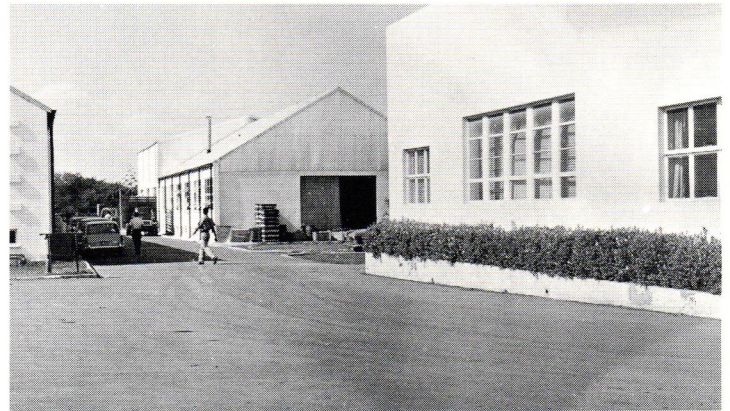
The real importance of all the developments that are becoming the centres of an environment of change is the great range of choice that it offers. The individual must be allowed to emerge, to choose, the facility must be such that he can become as extended or as simple as he wishes.

That hospitals can no longer be conceived as fixed pieces of architecture, that office blocks require flexible space not finite offices, that open plan schools are offering greater capacity for a wider range of teaching activities, that rooms or whole living units can be factory fabricated and transported to a plug-in location, indicate for us the image of our environment of change. The last minute alteration or extension to a building in the course of construction — to meet the needs of some new development in the clients organisation, is seen as something more significant than the fact that it spoils a carefully contrived elevation. We are using the phrases 'built in flexibility' and 'planned obsolescence' more often and the next step is to incorporate them into the environment. We are developing a wider range of less well defined, or pedigree shrouded constructional techniques, where demountability and valid life-span are our primary considerations. We are becoming less concerned about the shape of a window and more concerned about what might come through the opening. When we have become more modest about the appearance of our individual buildings, and more conceitedly optimistic about the activities they house we will have effected a significant step towards the future.

Acknowledgements to:— Sir Julian Huxley, Buckminster Fuller and John McHale, Cedric Price, Peter Cook and the Archigram group on whose original published material this article was based.

## Pace setters ... in Jamaica's development...

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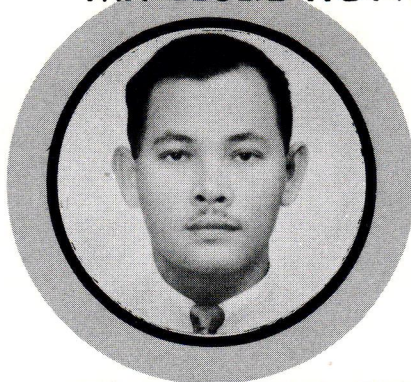
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# art

by Wilf Burton

## A RICH DIVERSITY

2 Painters Colin Garland Ben Eales

At first glance the two have little or nothing in common. For the sake of simplicity I will categorize Garland as a surrealist, and Eales as a pop artist.

In Lucy Lippard's excellent book 'Pop Art', is a chapter describing the common ground shared by both art forms, namely their development opposing the accepted art of the Establishment — an Anti Art.

During the 1920's, Surrealism was Cubism's anti-art, as Pop Art is the anti-art of Expressionism. Communication is an essential base for both painters, and an addiction to images, presented to us in visual terms, whether in dreams or in the world around us.

Garland's visual communications are small scale, intimate, esoteric, essentially dream derivatives — mainly portraits and landscapes. His early background is Australia, a stronghold of image painters, thriving on an extreme climate, barren bone-strewn wastelands, etc. Garland draws equally well from the potent lush sub-tropical background of Jamaica.

Eales' paintings are environmental. Large-scale constructions, visual impacts, a glad acceptance of now and the forces that shape our visual world — ads, TV, movies, signs, packaging, sex symbols, etc. — strong colours and powerful forms. He would be happy working with planners and architects shaping the city environment.

Both painters are easily the best of their respective type in Jamaica. Both are excellent technically and are developing and renewing ideas.

Long live diversity.

Above left

**Colin Garland**

*A Day in the Country*

32 x 24 in.

Left

**Ben Eales**

*I'm Looking Through You*

18 x 18 in.



Amador Packer photos





Colin Garland

*Profile*  
18 x 15 in.

*Amador Packer photo*



**Ben Eales**

*Love Bite*  
18" diam.



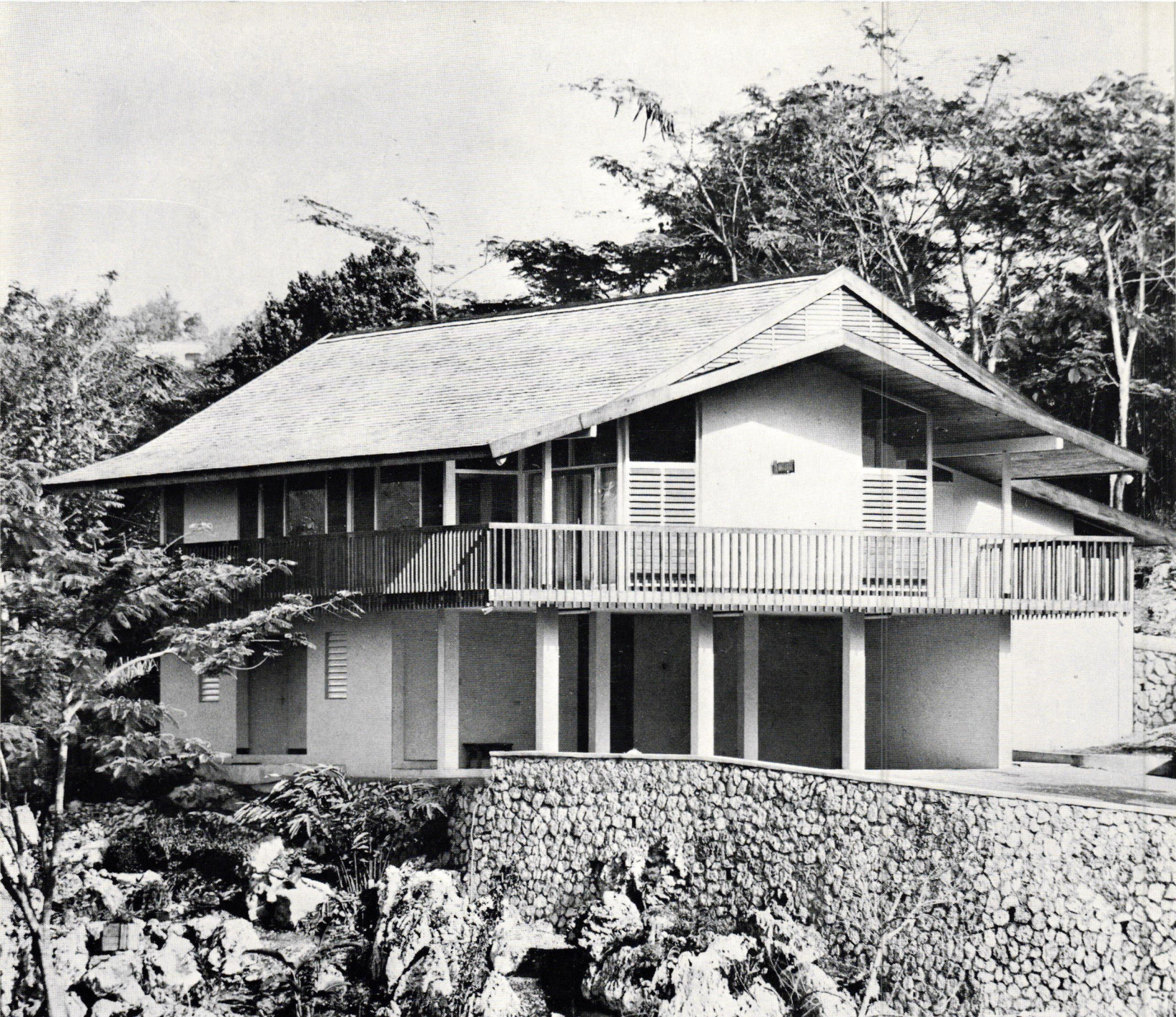
**Ben Eales**

*Where Did You Go*  
37 x 23 in.



*Amador Packer photos*





*Amador Packer photo*

## McDonald Residence, *Rectory Road, Stony Hill, St. Andrew*

*Architect* — David G. Kay.

*Structural Consultant* — Firth Cleveland Jamaica Ltd.

*Quantity Surveyor Consultant* — Cairney, Bloomfield & Associates.

*Contractor* — Felix Oakley.

**SITE** — Long & Narrow, sloping North to South. Size:  $\frac{3}{4}$  acre.

**FLOOR AREA** — 2,360 sq. ft.

**STRUCTURAL SYSTEM** — Reinforced concrete frame and load bearing block walls.

**MATERIALS** — Foundations: R.C. Strip.

Walls: Block.

Partitions: Block.

Flooring: Terrazzo Tile.

Ceiling: Redwood.

Roof: Cedar Shingles on trussed rafters.

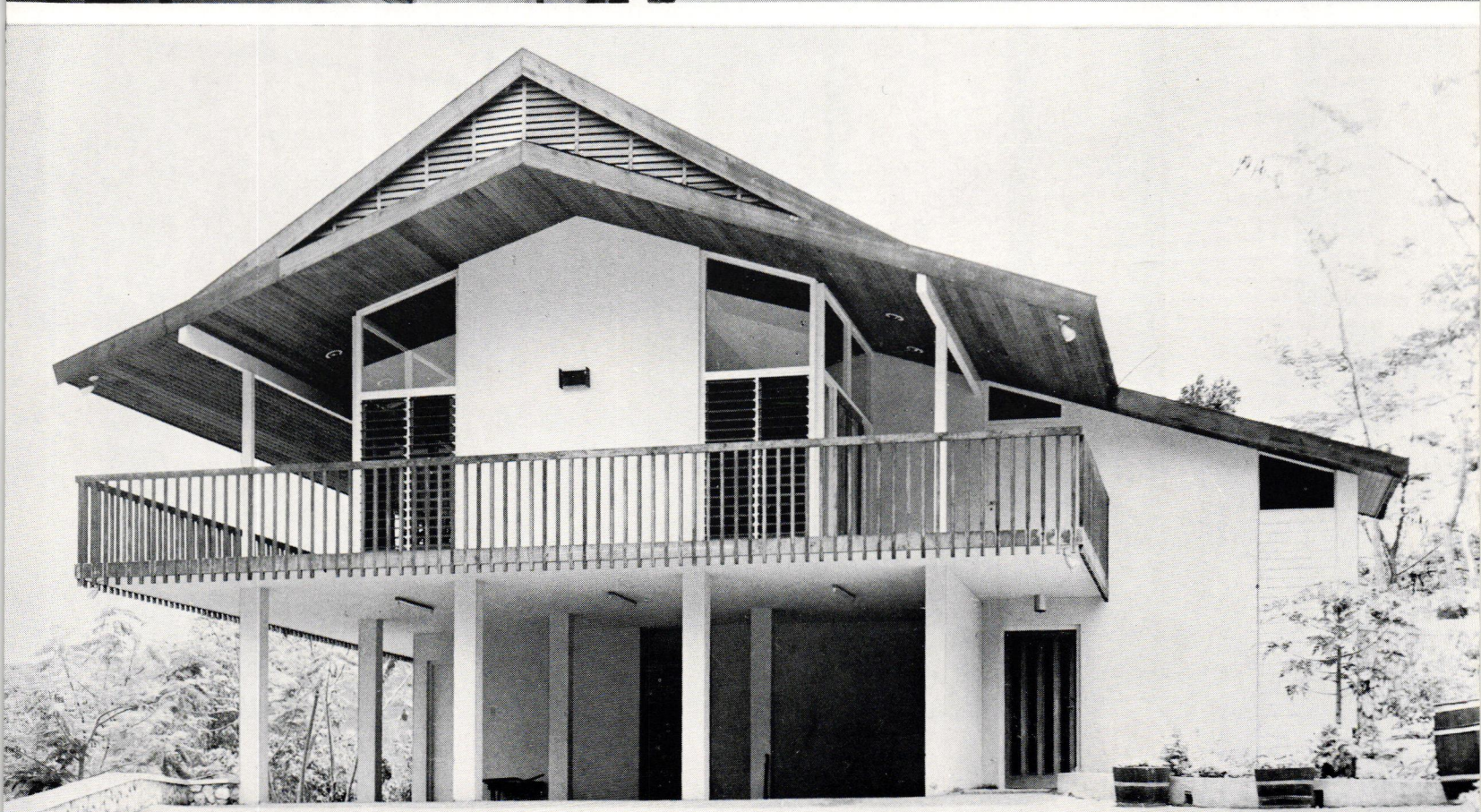
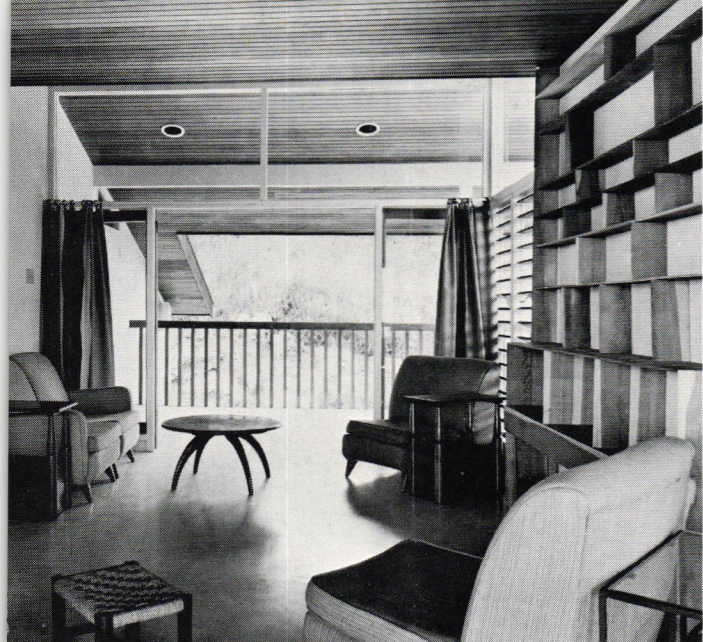
**CONSTRUCTION PERIOD** — 8 months.

**SITING** — Orientation: To take advantage of an exceptional view.

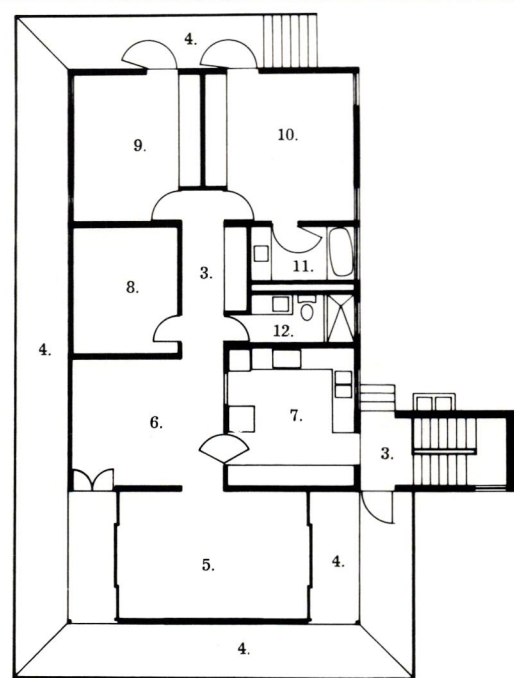
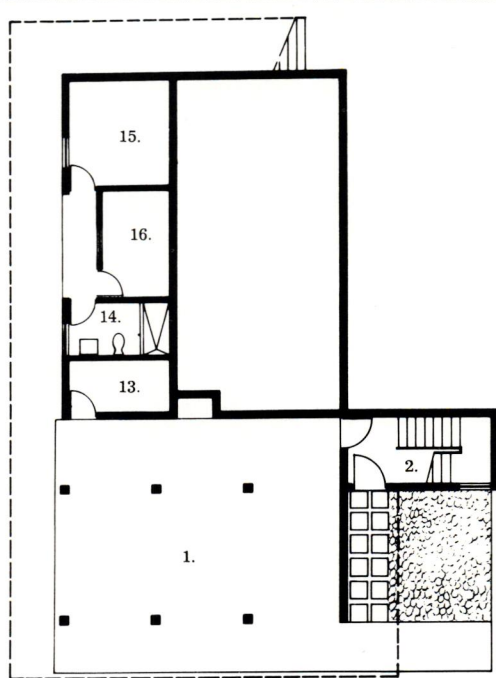
**RELATION TO TOPOGRAPHY** — To make maximum use of natural slope of the land.

**SPECIAL FEATURES** — Ventilated roof space.





*Amador Packer photos*



1. Carport
2. Entry
3. Hall
4. Balcony
5. Living Room
6. Dining Room
7. Kitchen
8. Study
9. Bedroom
10. Master Bedroom
11. Master Bathroom
12. Bathroom
13. Store
14. Maids Bathroom
15. Maids Room
16. Utility





## *Residence of Dr. & Mrs. Clive Charles, Billy Dunn, St. Andrew*

**SITE** — Size approx. 1 acre. Gentle slope from North to South. View mainly to the North to the mountains with a lesser view towards the sea but the sea view lacks privacy.

**FLOOR AREA** — Approx. 3,500 sq. ft.

**STRUCTURAL SYSTEM** — Composite load bearing block walls and reinforced concrete frame.

**MATERIALS** — Foundations: Reinforced concrete.

Walls: Reinforced concrete block.

Partitions: Plastered reinforced concrete block.

Flooring: Insitu terrazzo.

Ceiling: Redwood boarding.

Roof: Shingle roof with redwood ceilings.

**CONSTRUCTION PERIOD** — 32 weeks.

**SPECIAL FEATURES** — Swimming pool forming part of living room terrace.

### DESIGN CRITERIA.

The owner desired large areas for exterior living. The house was designed in a bi-nuclear purpose. The living rooms are in a different block from the sleeping areas which are on a higher elevation. All rooms were designed around the exterior outdoor living areas and a private balcony. A Family Room which will be used for informal dining and television was also provided.

*Architects & Engineers* — Goodman Lowe & Associates.

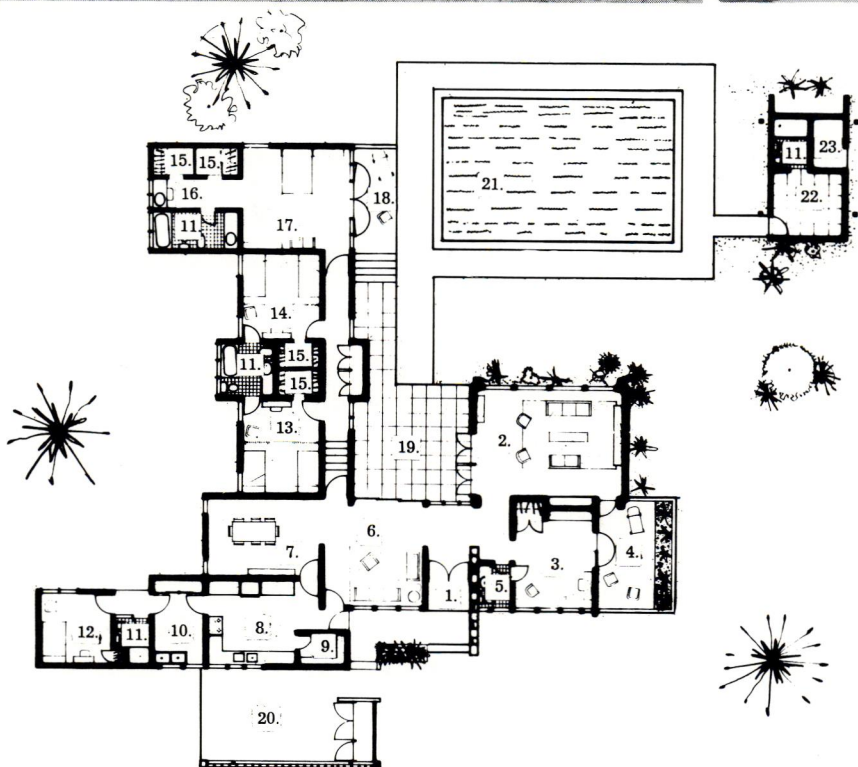
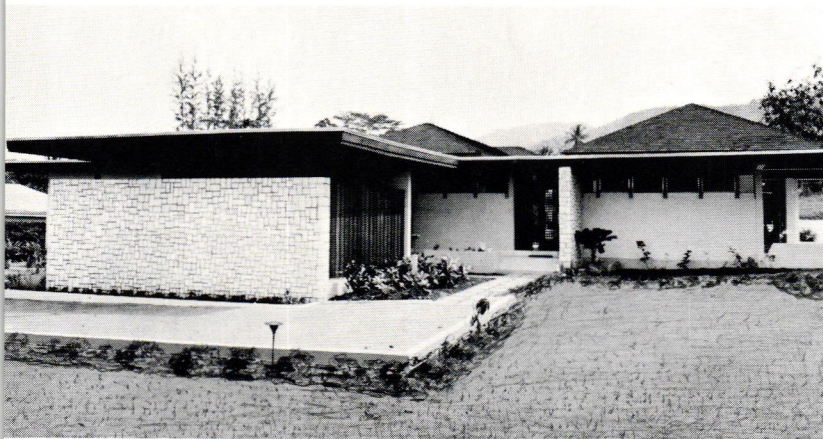
*Consultant Quantity Surveyor* — M. J. Stoppi & Associates.

*Contractor* — L. A. DeSouza.





Amador Packer photos



- |     |                 |
|-----|-----------------|
| 1.  | Entry           |
| 2.  | Living Room     |
| 3.  | Study           |
| 4.  | Porch           |
| 5.  | Powder Room     |
| 6.  | Family Room     |
| 7.  | Dining Room     |
| 8.  | Kitchen         |
| 9.  | Storage         |
| 10. | Laundry         |
| 11. | Bathrooms       |
| 12. | Maids Room      |
| 13. | Bedroom         |
| 14. | Bedroom         |
| 15. | Walk-in-closets |
| 16. | Dressing Room   |
| 17. | Master Bedroom  |
| 18. | Balcony         |
| 19. | Terrace         |
| 20. | Car Port        |
| 21. | Swimming Pool   |
| 22. | Changing Room   |
| 23. | Mechanical Room |





*Amador Packer photo*

# CHAPELTON COLLECTORATE

CHAPELTON, CLARENDON

*Architect* — Ministry of Communications and Works

*Structural Consultant* — Ministry of Communications and Works

*Mechanical Consultant* — Ministry of Communications and Works

*Quantity Surveyor* — Ministry of Communications and Works

*Contractor* — Douglas C. Orane

FLOOR AREA — 5,120 square feet.

STRUCTURAL SYSTEM — Reinforced Concrete Frame.

MATERIALS — Foundations: Reinforced Concrete.

Walls: Block Work.

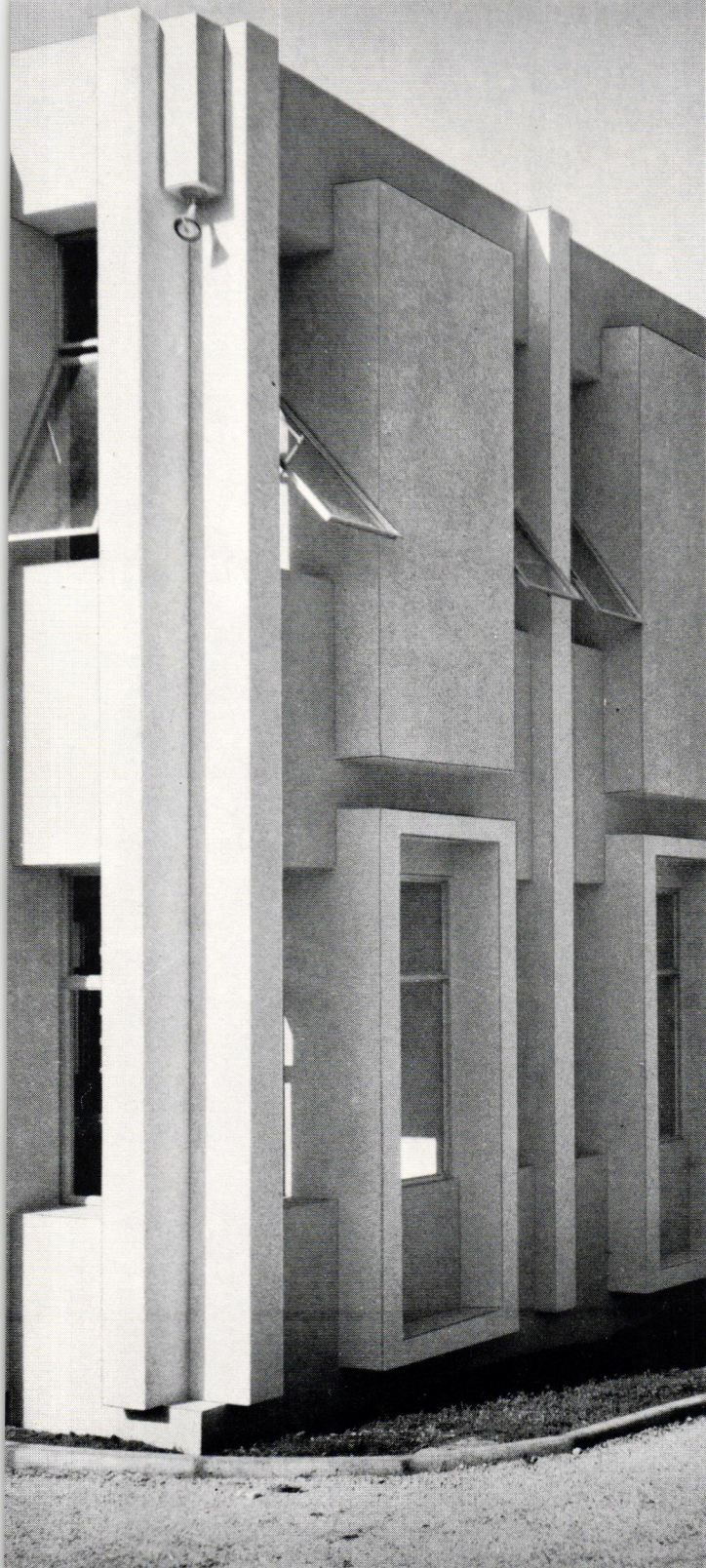
Partitions: Aluminium Framed.

Flooring: Terrazzo Tiles.

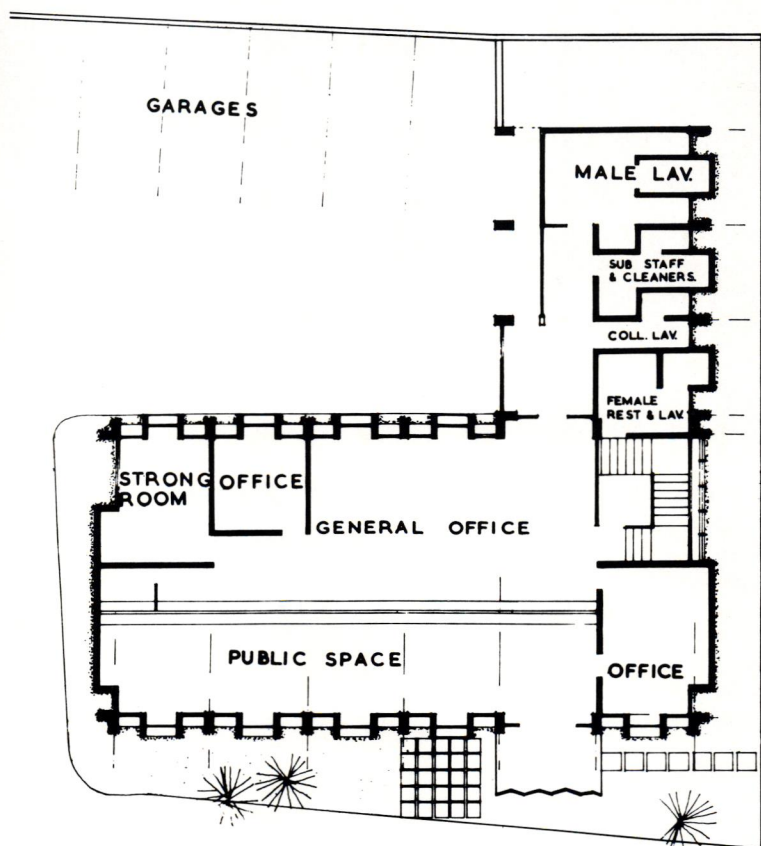
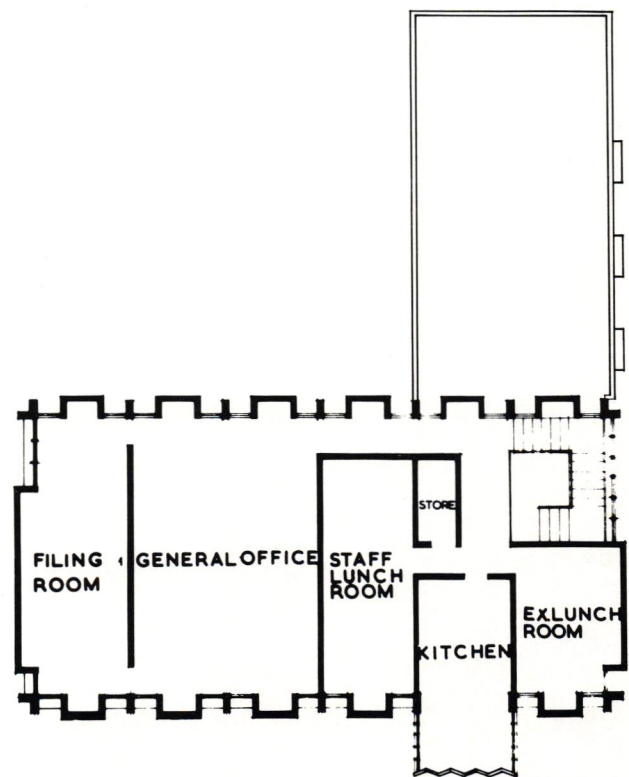
Ceiling: Fair-faced Concrete and Aluminium Framed with acoustic tiles.

CONSTRUCTION PERIOD — 10 months.





*Amador Packer photo*







*Amador Packer photo*

## IBM Building

*Title* — IBM Building — Knutsford Blvd. Kingston.

*Architects* — McMorris, Sibley, Robinson.

*Electrical Consultants* — Warren, Auderson & Associates.

*Quantity Surveyor* — B. G. W. Cawston & Partners.

*Contractor* — McGregor & Levy Ltd.

**SITE** — New Kingston, at the corner of Knutsford Boulevard and Barbados Avenue. Size: 95' x 160'.

**FLOOR AREA** — 21,120 sq. ft.

**STRUCTURAL SYSTEM** — The first floor is designed on the principle of a framed structure. The first floor cantilever beams and columns withstand the loads coming down from the floors above and the roof. This makes the cantilevered beams and the periphery columns the main members in the structure. Edge beams are constructed at second floor and roof levels and are supported by concrete fins shown on elevations.

**MATERIALS** — Foundations: Reinforced concrete spread and strip footings supporting columns and periphery walls.

Walls: Generally concrete block. The

elevator shaft is in reinforced concrete. Partitions: Modular gypsum panels in aluminium frames.

**Flooring:** The ground floor is generally 8" x 8" terrazzo tile. The two upper floors are 10" x 10" locally manufactured vinyl tiles. Some areas of the ground floor are carpeted.

**Ceilings:** 2' x 2' acoustic tile in a lay-in exposed metal suspension.

**Roof:** Two layers of mastic asphalt covered with limestone chips.

**Airconditioning:** Each of the three floors in the IBM Building is provided with its own independent airconditioning system. The design was prepared by Conditioned





*Amador Packer photo*

Air Corporation Ltd. and installed under the supervision of Warren, Anderson & Associates.

On all floors the ceiling space is used as a plenum for the re-circulated air and the units on all three floors are switched on and off from a central control panel located in the first floor machine room. Windows: Anodized aluminium and glass. CONSTRUCTION PERIOD — December 1965 — October 1966.

#### DESIGN CRITERIA & GENERAL INFORMATION

For some years prior to 1965, the people of Kingston watched New Kingston's open land lie undeveloped. Finally, interest in the area renewed as construction of the British-American Office Building commenced. Almost simultaneously, the Jamaica Property Company were able to interest the IBM World Trade Corporation in new office space in the area. It was then decided that not only should sufficient space be designed to accommodate IBM with their anticipated future expansion, but also additional office space for other firms who were beginning to show interest in renting space in New Kingston. The principal tenants, IBM, required a building of distinction with simplicity and clean lines.

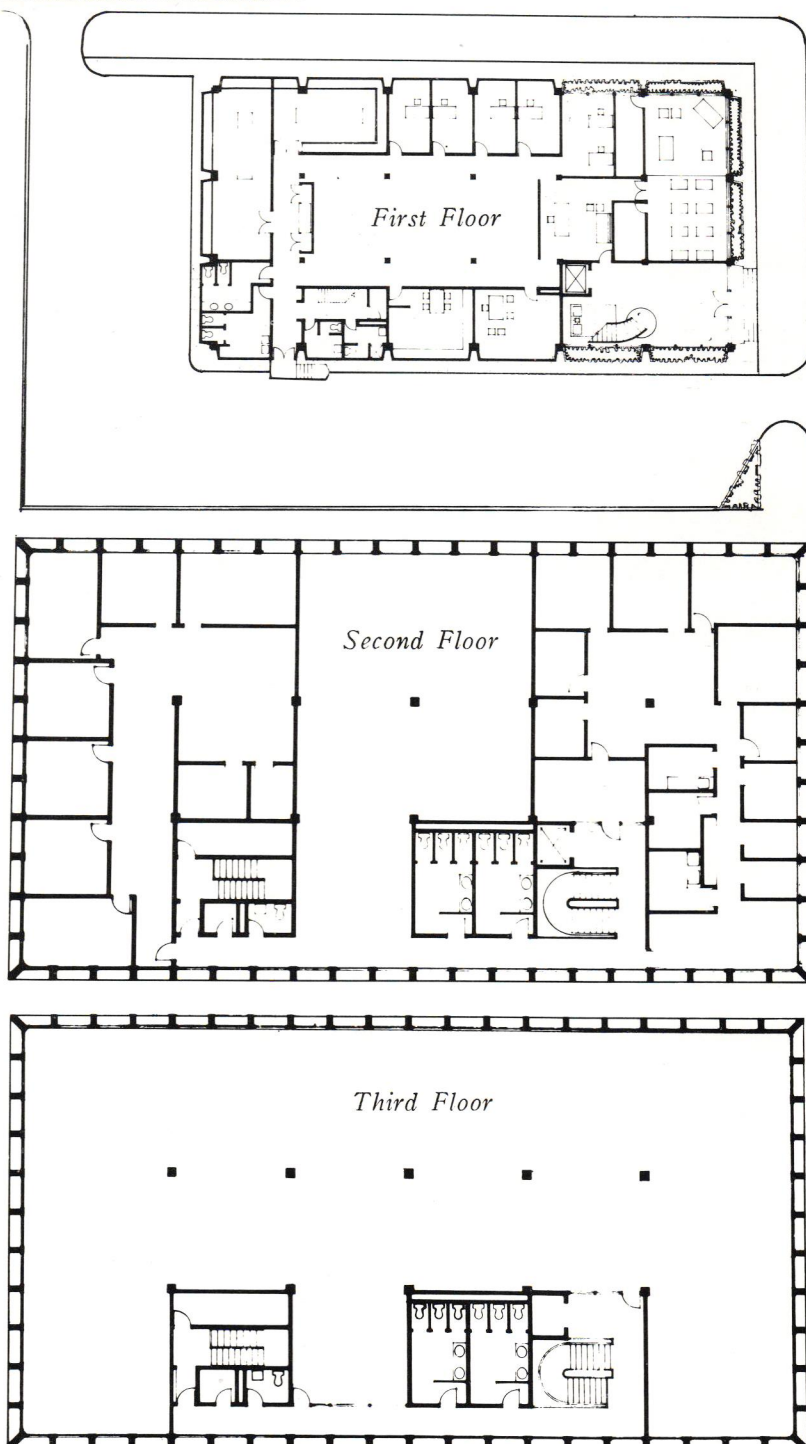
A site was selected at the corner of Knutsford Boulevard and Barbados Avenue. This corner site allowed for good means of entry and exit for tenants' cars and the shape of the site dictated the location for parking and for the size of the building.

It emerged that three floors were required — the ground floor to be occupied by IBM and the two upper floors for rental to other firms. Although IBM's requirements were known, the distribution of the remaining space was not. It was, therefore, felt that the largest possible column free space should be provided so that the area could be subdivided easily. The service and access corridors were arranged to the south with the major rental area on the north with its splendid view of the Blue Mountains and the surrounding area.

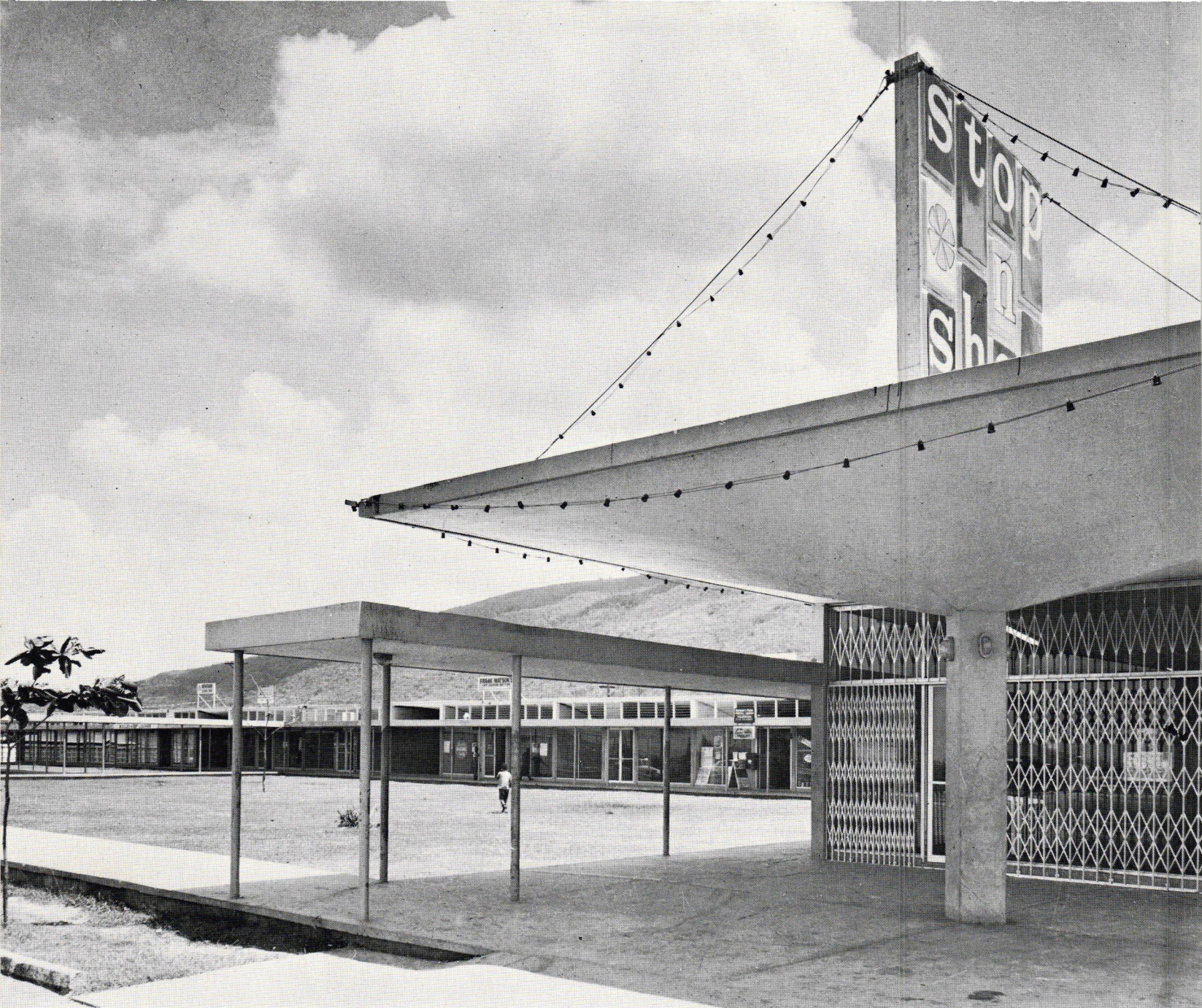
The window area is divided by concrete mullions so that partitioning would be relatively easy. With these points in

mind, and the fact that the Owner required some form of landscaping around the building, the shape and form of the building emerged. The requirements of IBM on the ground floor and the modular requirements of an unknown office layout on the upper floor dictated the kind of elevation that would be required. The need for maximum office space on the upper floor and the landscape and partitioning requirements at ground level dictated that the ground floor plan had to be smaller than the upper floors.

The exterior of the building is finished in cement plaster and paint. The majority of the building is painted white, leaving the moulded form to give an interesting textured elevational treatment.







*Amador Packer photo*

# Duhaney Park Shopping Centre

WASHINGTON BOULEVARD, KINGSTON

*Architect* — Wilson Chong & Associates.

*Structural Consultant* — Franks & Associates.

*Quantity Surveyor* — B. G. W. Cawston & Partners.

*Contractor* — L. I. Chang (Engineers), Ltd.

**SITE** — Size: 3 acres.

**FLOOR AREA** — 30,000 sq. ft.

**STRUCTURAL SYSTEM** — Reinforced Concrete.

**MATERIALS** — Foundations: Reinforced Concrete.

Walls: c.c. blocks.

Flooring: Gore's Terrazzo Tiles.

Ceiling: Fair Faced Concrete.

Roof: Hyperbeloid Parabolic roofing.

**CONSTRUCTION PERIOD** — 9 Months.

**DESIGN CRITERIA** — Client's brief.

**SITING** — Natural ventilation.

Orientation: North & South.

Site Drainage: Surface drainage to Gully at East & South.

Relation to topography and adjoining buildings.

**SPECIAL FEATURES** — HP Shell roof — Each 25 foot square shell is carried by one column.

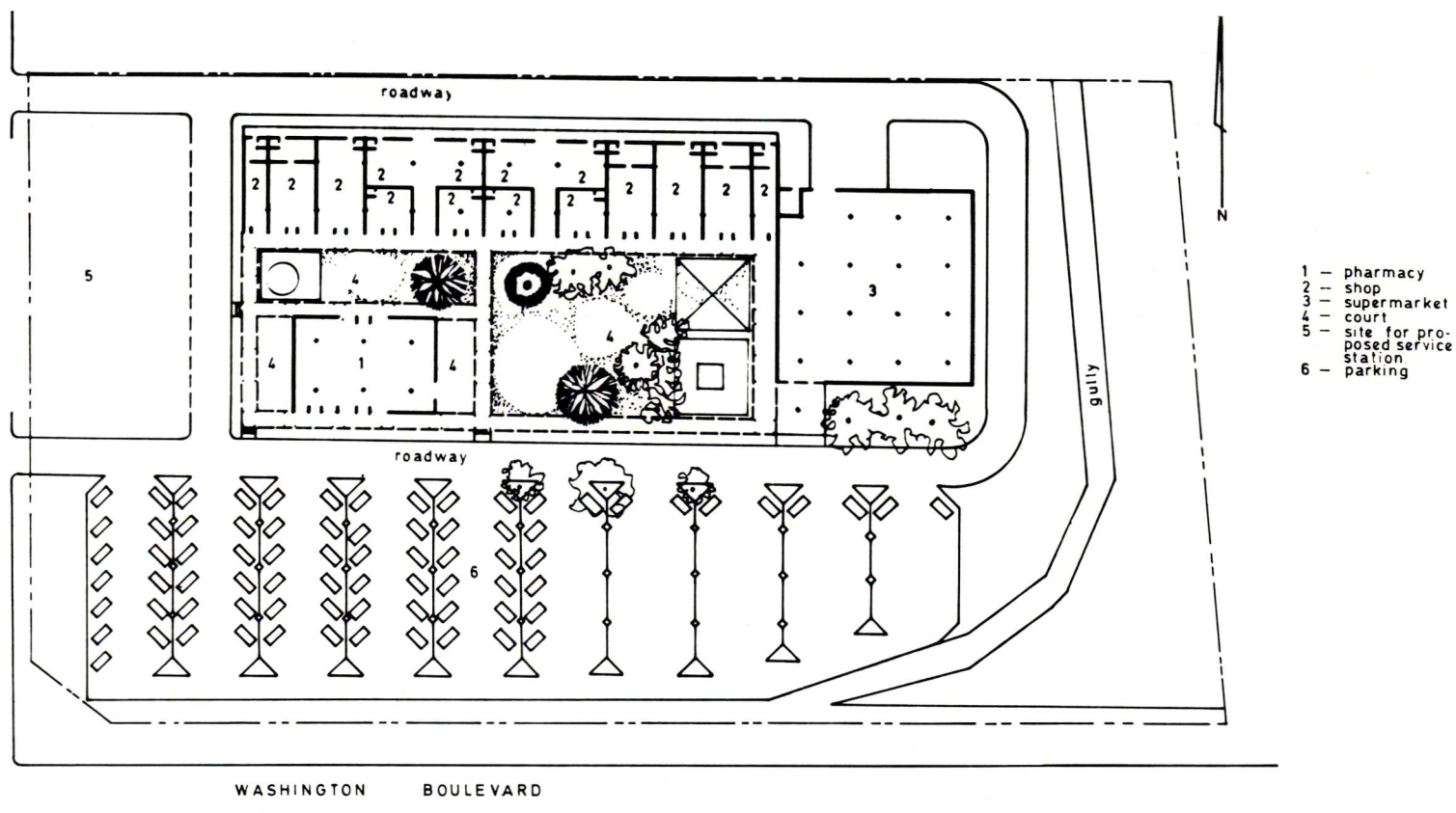
By locating a few shops in front of the 'main line', a mall was created. The simple but effective landscaping planned for this area, along with the covered walkways linking the shops, will result in pleasant surroundings which tempt shoppers into spending more time and money.





Interior of 'Stop-n-Shop' Supermarket—Showing HP Shell Roof

Amador Packer photo

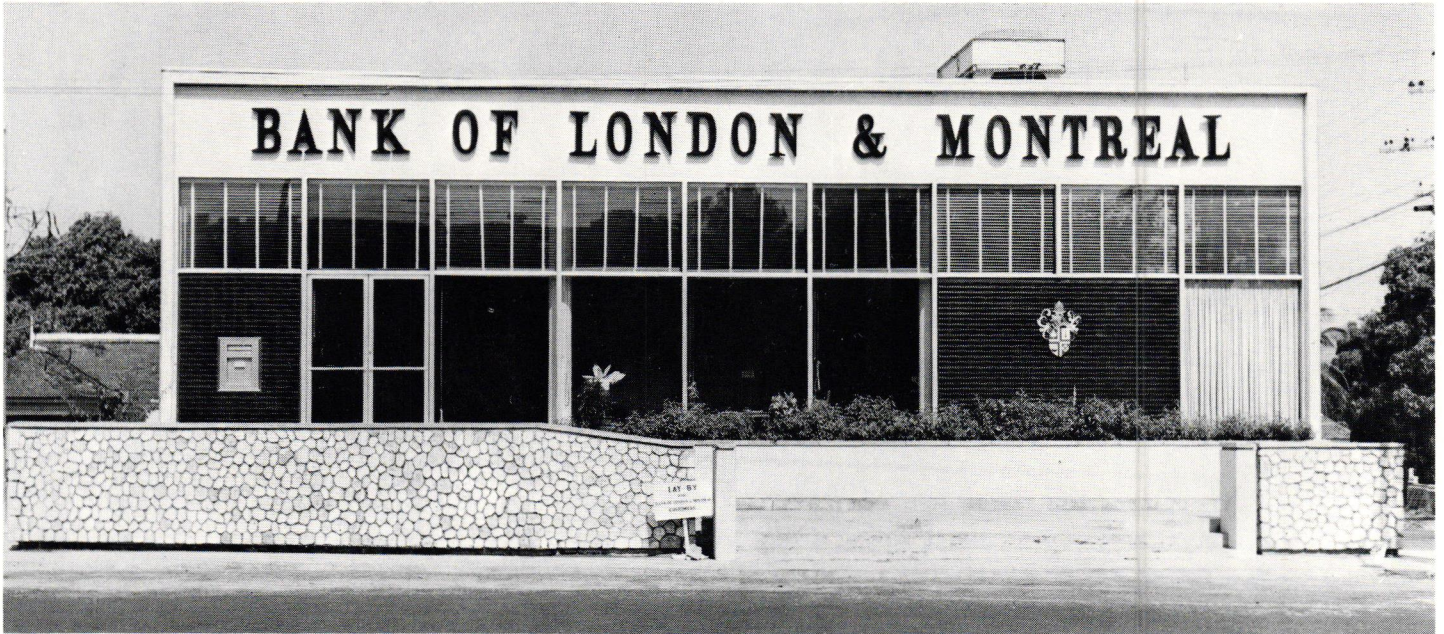




Some of the  
***BANK BUILDINGS*** around ***Kingston***  
*Present and Future*

*Amador Packer photos*

*Arch. McMorris, Sibley, Robinson in Association with W. H. Watkins & Partners.*



*Arch. Norman & Dawburn*

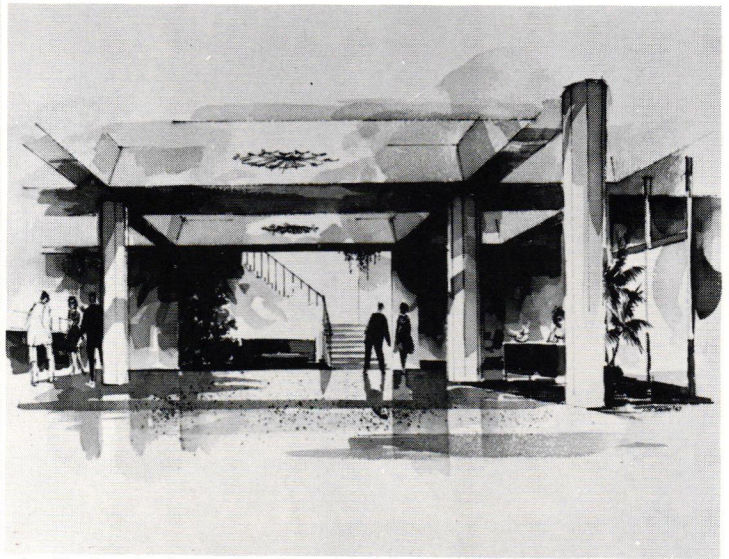
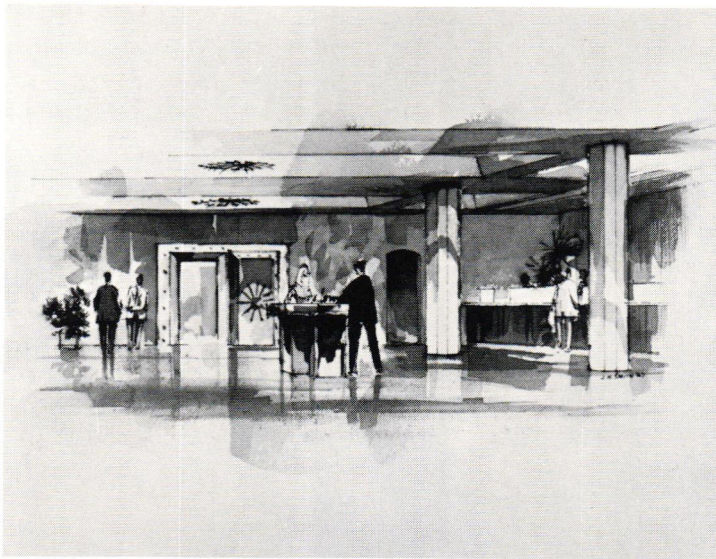


*Barclays Bank D.C.O. King St.*

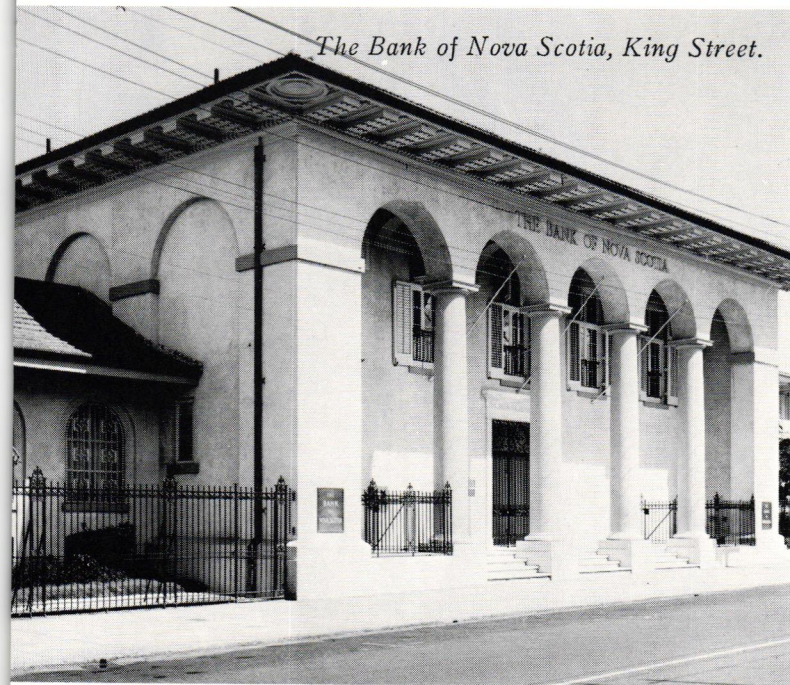
*Proposed:  
 Barclays Bank D.C.O., Cross Roads  
 Rutkowski, Bradford & Partners  
 Architects & Consulting Engineers*



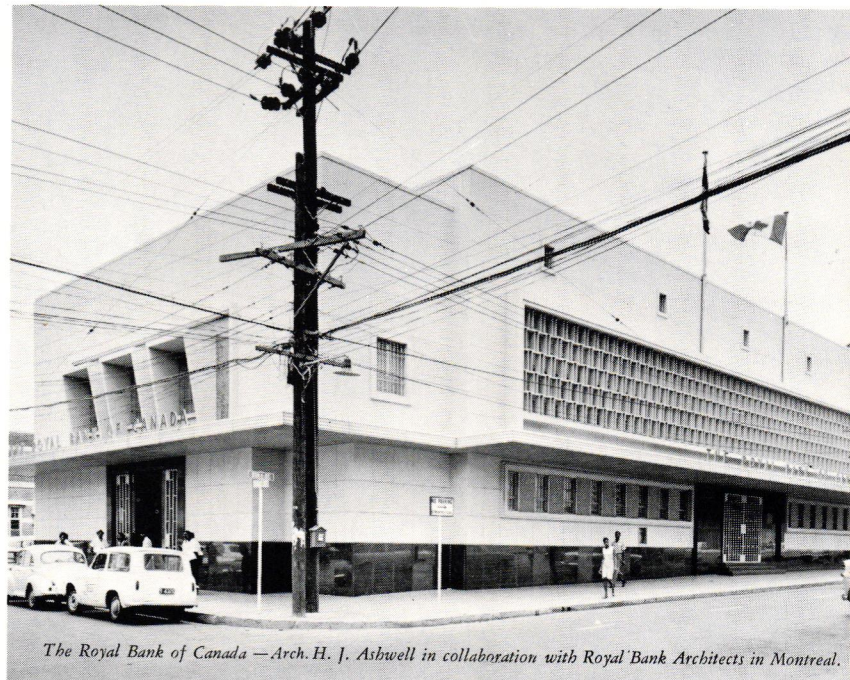




*Proposed: Jamaica Citizens Bank Designing Arch. R. L. Aeck, F.A.I.A. Atlanta, Georgia, U.S.A.  
Arch. & Consulting Engineers — Rutkowski, Bradford & Partners*



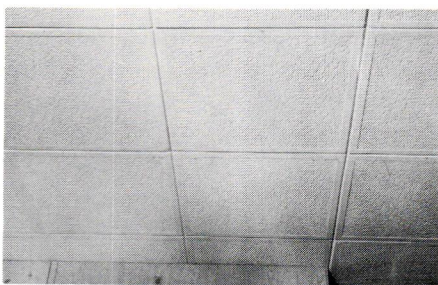
*The Bank of Nova Scotia, King Street.*



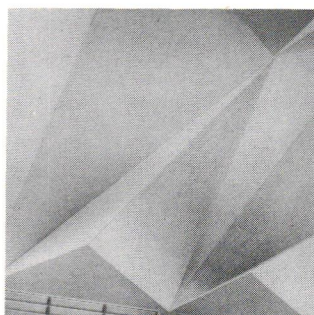
*The Royal Bank of Canada — Arch. H. J. Asbwell in collaboration with Royal Bank Architects in Montreal.*

*Amador Packer photos*

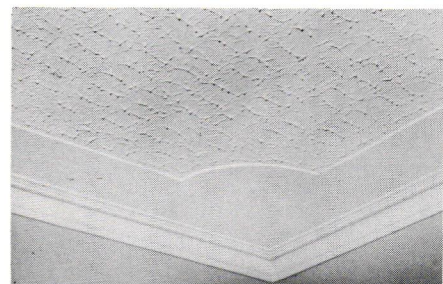
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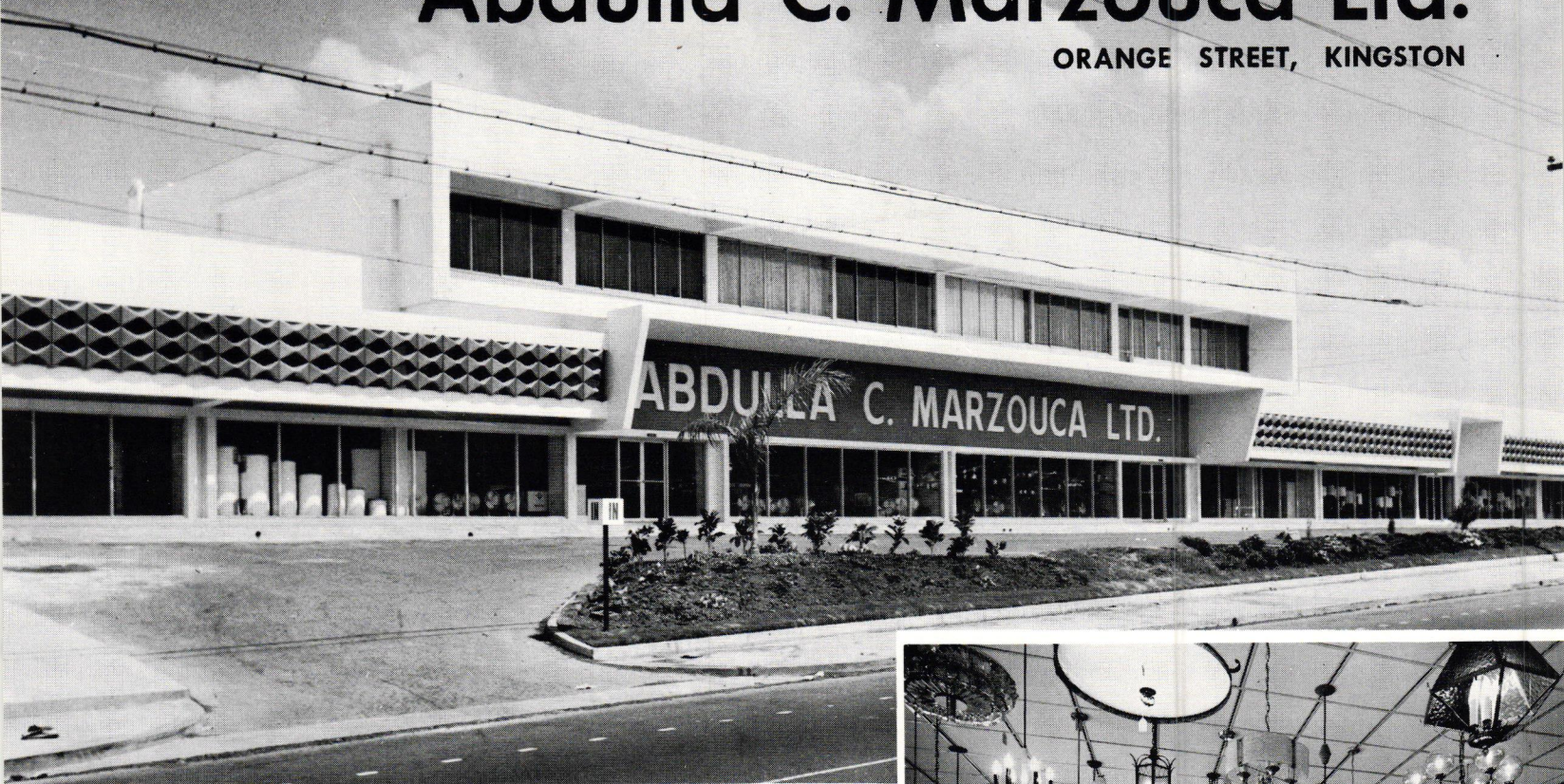
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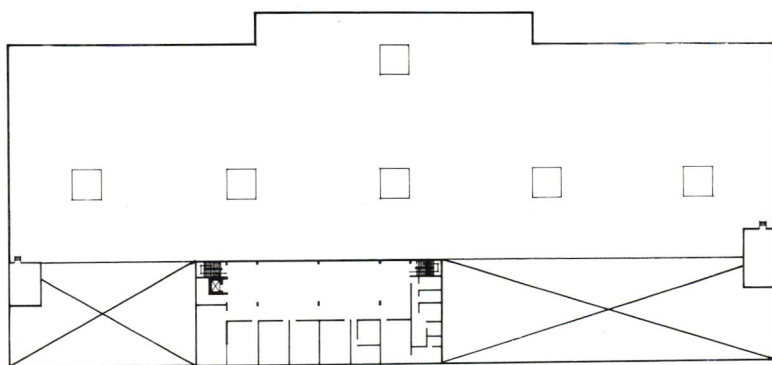
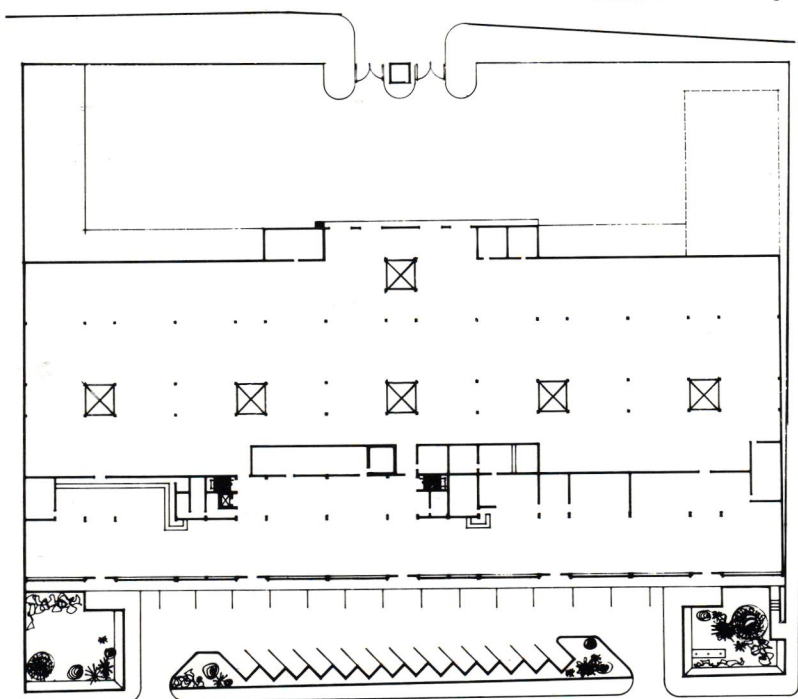


# Abdulla C. Marzouca Ltd.

ORANGE STREET, KINGSTON



Amador Packer photos

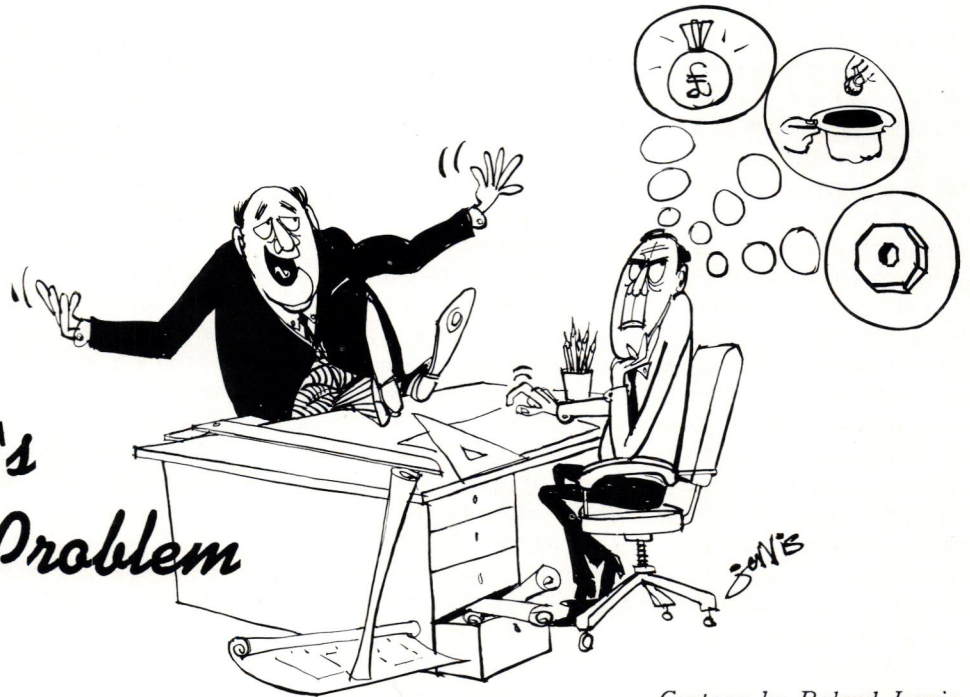


*Architect* — McMorris, Sibley, Robinson  
*Structural Engineer* — Franks & Bachelor  
*Electrical Engineer* — Warren, Anderson & Associates  
*Quantity Surveyor* — B. G. W. Cawston & Partners  
*General Contractor* — A. D. Scott Ltd.  
*Air Conditioning Engineer* — Robert C. Lyon-Hall & Associates

**SITE** — Size: 73,900 square feet.  
 Description: Level; bordered on three sides by Orange Street, Calabar Ave., and Slipe Pen Road.  
**FLOOR AREA** — 66,250 square ft.  
**STRUCTURAL SYSTEM** — Composite Steel and Reinforced Concrete.  
**MATERIALS** — Foundations: Poured Concrete.  
 Walls: Concrete Block.  
 Partitions: Concrete Block and Sound Proof Movable Partitions.  
 Flooring: Terrazzo.  
 Ceiling: Suspended Acoustic Tile.  
**SPECIAL FEATURE** — Coloured aluminium sun-breaker.



# The Architect's Toughest Problem



Cartoon by Roland Jervis

There exists somewhere in time and space a detailed solution to almost every human dilemma. In the Second Century A.D., a book was written called *Razin*, which contained an essay on how to win at horseraces, another on how to obtain a rich wife, and a third on how to make oneself invisible. In 1436, one Cennino d'Andrea Cennini, a Florentine, described in detail not only how to paint every known natural form, but also how to fabricate the brushes and grind the pigments. And he climaxed the book with an absorbing chapter on "How to Make a Plaster Cast of Your Own Person." In the 16th Century, a soldier-poet-scientist named de Bergerac listed nine sure ways of getting to the moon. And only last April, a New York attorney immeasurably broadened the horizon of everyman's capabilities with a work entitled, *So You're Going to Build an Ocean Liner!*

Naturally, the building industry has been able to capitalize heavily on its built-in invitation to the weekend hobbyist and the basement craftsman, and other fields have been quick to follow the example — from beating the income-tax rap to learning the saxophone, from vocabulary improvement at home to self-taught Karate. The architectural profession, however, has been characteristically slow in developing this trend to advantage. The best we have to offer so far is a few uninspired brochures on "How To Select an Architect," in a pathetic effort to prove to the public that we exist at all. I have looked in vain for a work on one particular subject, which, if appropriately documented, would greatly benefit our entire profession. The article might be entitled "How to Select a Client." I am so confident of an appreciative audience (as well as an entourage of gifted company) that I have decided to write a brief treatise on this subject myself.

The proper selection of architectural clients requires a rare balance of intuition, psychology, and common or garden horse sense — not in that order, but in reverse.

Under the heading of common sense, there are three simple rules. First, in your appraisal of the visitor to whom you have granted audience, it is essential to determine whether or not he is well-endowed. Whether he is rich in intellect, wit, or merely in money, remember that he may decide at some point to share some of his wealth with you. On the other hand, if he is poor, he may want to share his poverty with you, and this desire will strongly influence your relationship. It is not mandatory to rule him out in either case; it is paramount,

however, that his classification be established at the outset.

Secondly, you must determine whether or not he wants to build. If he does, proceed immediately to rule three. If he does not, and if he has responded negatively to question one, the going is likely to be difficult, and it may be wise to cull him out as a prospect. If he is well off, however, all that is needed is the time and ingenuity to cajole him (or his wife) into a constructive frame of mind. An extension to his plant, a pavilion in his garden, a small villa on the Costa Brava are a few plums you might dangle in front of his quivering nostrils. But those are details.

The third rule has a personal angle. If you are still buoyed up by the hope that this may be the client to end all clients, ascertain whether he really wants you. There is always the possibility that he is planning to pick your experienced brains (gratis) in order to check up on his wife's cousin's son, who has recently tied up with a well-known package-dealer. Or he may want to retain you simply as a conversation-piece type of tax loss. In any case, avoid going too far until you are completely satisfied on this point.

Suppose now that your prospect has passed all preliminary tests with flying budgets. Comes the inevitable and difficult question of human psychology, and this introduces a strange paradox. The architect who is capable of dealing with the myriad aspects of client selection might be far better off to branch into the field of psychology per se, and abandon the practice architecture until he retires. The physician who dabbles in the arts, for example, is on far more solid ground than the architect who attempts to use the science of the mind to his professional advantage. Yet every Tom, Dick, and Harry in the architectural world, regardless of his private income or his design ability, must call up every available psychologic resource at the first encounter with a new prospect. In fact, the "interview" is the moment when many instant decisions must be made, all bearing heavily on the final winnowing-out of selectees.

To illustrate the challenge of each moment, let us examine a few of the cases where the architect-cum-psychologist must constantly analyze his prospect. First, in the case of the client as an individual, does he have the right sense of humour? Does he laugh at your jokes as though to ingratiate himself, or is he genuinely affected by your wit? Or does he laugh at all? Does he smile at the mention of the fee? Or is



he the first to bring it up? If so, in what context? Your instinctive reaction to these and many other subtle points will help you decide whether to continue to entertain him or to rise and hold out your hand, whether to embrace him wholeheartedly or to dismiss him with appropriate frigidity.

The intricacies of client psychology are compounded in the confrontation or architect and building committee; this is far more complex and entails a mastery of tactics not unlike a military campaign. First, there is the matter of the make-up of the committee as a whole. Has the town or corporation, in requesting this audience, put its best foot forward? Is the assembled group an honest representation of your client, or have the trouble-makers purposely stayed away from the first meeting? The architect must pierce through the polite sheen of social form and see beyond the exterior characteristics of the group and of each individual; his acceptance of the proffered commission is tacit acceptance of their society during the entire design and building period and must be based on quick and correct impressions. There is no middle ground; he must accept or reject the entire group, no matter how much he may be impressed by the sagacity of one of its more attractive female components.

Generally speaking, the same rules-of-thumb apply to committees who seek out your services as to individuals who request access to your fund of genius. Have they remained alert during the entire interview? Did they ask any questions that you had not anticipated? If they remain past the prescribed period, it is a good sign; and they deserve full consideration. Concentrate on the acknowledged leader of the group. If he has impressed you, it may be the start of a long and fruitful association, (if only to help him lay out an extension to his porch).

There are those who might suggest at this point that the

final choice of a client should be made by assembling all the facts and impressions and feeding them into the impersonal maw of the computer. This may be the ideal procedure in some cases; yet, in a sense, it suggests a cowardly negation of personal responsibility. The client who has overcome the abstract hurdles, as well as the obvious, concrete obstacles, deserves more consideration than the soul-less machine can offer. The possibility that he may be accepted as your client must rest on a more humane decision.

Interestingly enough, this delicate problem may resolve itself in a few brief words at the end of the session. Here, perhaps, is the greatest test of the architect's intuition. There comes a moment when you have made your visitor so much at home on the subject of your mutual venture that he leans back in his chair, fingertips touching, an ironic expression on his countenance, and says dreamily, "Now, the kind of building I want is..." At this point, the architect (depending on his work load) is legally and morally at liberty to write him off or to turn him over summarily to the mercies of a junior associate. The creative world is already far too cluttered with the work of patrons who, unwittingly or not, have tried to out-guess their proteges.

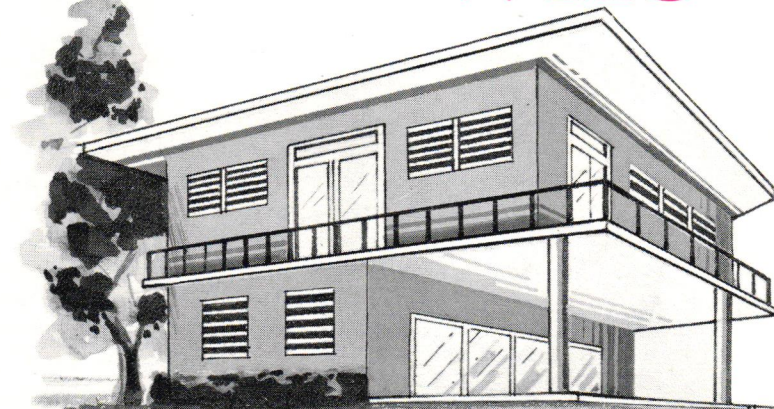
But if your visitor, nervous with anticipation, leans forward on the edge of his chair and says, haltingly, "You're the architect; what do you think?" then seize the hem of his garment and follow him. If you are fortunate enough to be visited by one of this rare breed, never let him go. You may not see his like again.

*By Robert H. Murrux*

The author is an architect practicing in Bridgeport, Connecticut.

Reprinted, courtesy of Progressive Architecture, July 1966.

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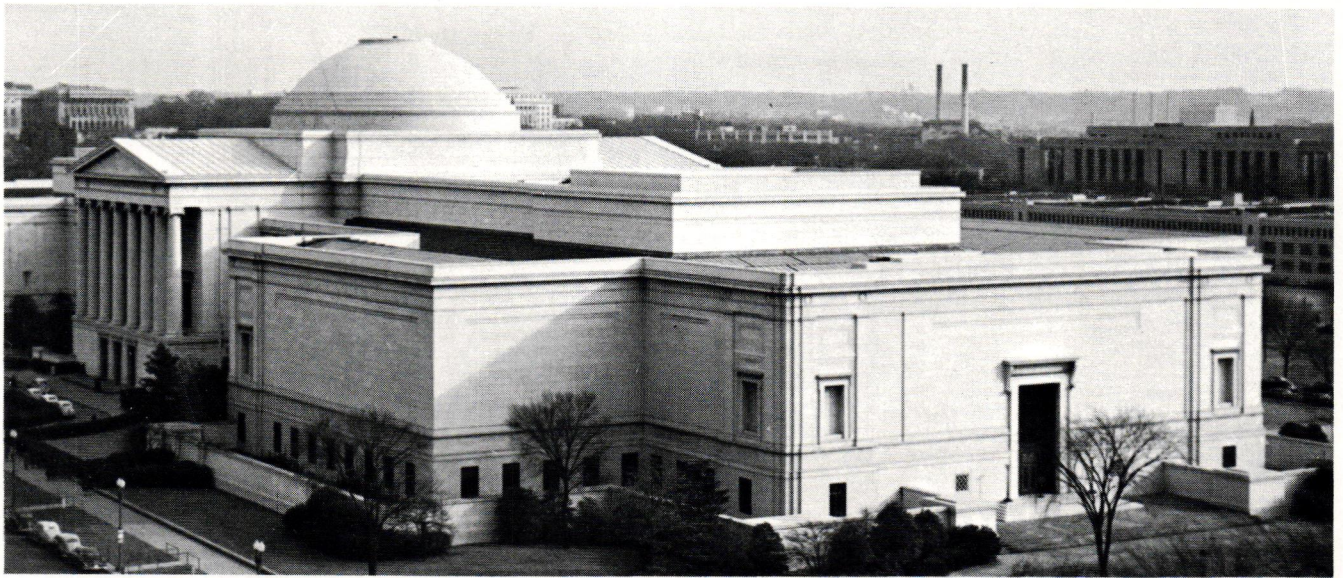
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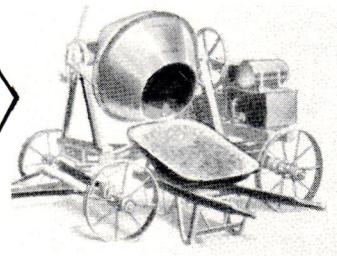
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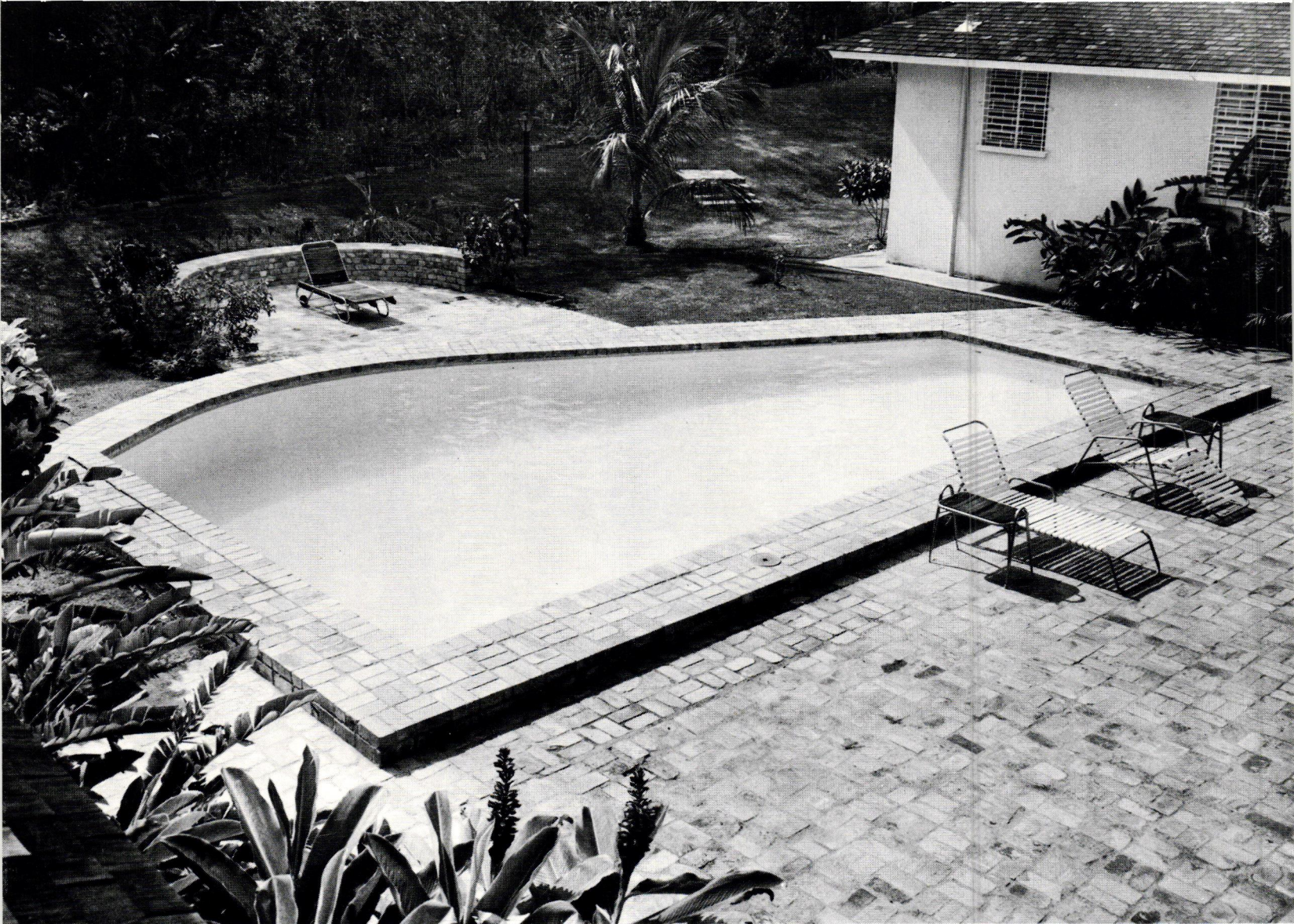


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*Swimming Pool at Residence of Mr. & Mrs. Frank Hall, Earls Court, St. Andrew.*

*Amador Packer photo*

# RESIDENTIAL SWIMMING POOLS

*by Patrick A. O'Callaghan and David G Kay*

Jamaica, with outdoor living all the year, is in every respect the ideal place for a residential swimming pool. In California and Florida where the climate is less favourable for pools, few people who build a house costing more than \$20,000 would dream of omitting a pool.

## COST

The first question that occurs to a potential pool builder is how much will it cost to build a pool. A standard, filtered, residential pool construction varies in cost from £600 to £2,000 depending on the terrain, type of construction, and the extent of terraces or broadwalks around the pool.

## MAINTENANCE

The second question is how much trouble and cost will it be to maintain the pool. Fortunately, with the large and competitive pool industry in many countries, particularly the United States, continuous efforts are being made to develop new ways of maintenance that cut the pool owner's efforts and expenditure. One manufacturer markets

a self cleansing pool which functions by creating a turbulence in the water, keeping dirt in suspension and directing it at skimmer or outlets to the filter.

## LOCATION

A well designed pool is an asset to a home. Its correct location in relation to the house and the landscape should be given careful consideration. A pool becomes a focal point for the life of the family and the entertainment of friends. Convenient location therefore, in relation to terraces, dining areas, bars, changing rooms and toilet facilities, will insure maximum utilization.

## FORM

There is a vast variety of shapes and sizes of pools and selection should be left to the architect, who is trained to understand and interpret the complete living environment.

## CONSTRUCTION

Selection of the correct construction for a pool should also be left to the professional. The pressure of the water on



the walls and the pressure of the earth or ground on the walls when the pool is empty, should be considered in the pool design. The lowest cost pool construction in Jamaica, is a reinforced slab floor with reinforced concrete block walls, finished with a water proof cement/sand render. Pools can also be constructed of reinforced concrete for floor and walls, or sprayed concrete on a steel mesh, called gunite. They can also be finished with a vinyl liner.

Rendered pools are usually painted internally with a patent swimming pool paint. The top is often finished with glazed tiles to facilitate the removal of scum marks at water level. Tiles should be recessed into the wall to bring them flush with the render facing, to prevent water getting behind and causing them to lift. Also, allowance should be made for the movement of the pool, due to temperature changes. Particular care should be taken in filling the joints between the tiles with cement to water-proof them.

### SAFETY

Pools can constitute a danger, particularly where there are young children present. This danger can be lessened by fencing-in the area of the pool. Gates which can be locked are supplied by many pool equipment manufacturers at an approximate cost of £90 for a 15ft. x 30ft. area. Other means of enclosure such as dense planting or plastic covers which are held down by anchor devices, are also relatively child proof. To prevent accidents, rules for the use of the pool by non-swimmers, and others, including a roped off shallow area or separate wading pool, and continuous supervision and vigilance, are required.

### FILTRATION

Before building a swimming pool, it is necessary to understand the need for filtration and chlorination. It is of course possible to empty and refill the pool at intervals of a week or so, but the cost of water will soon outweigh the capital cost of a filtration system and unless chlorine is used, the water will very quickly be contaminated. In addition, the disadvantage or impropriety of this practice in a country where there is a shortage of water, is obvious.

When a pool is filled with water, it immediately begins to pick up undesirable contaminants, some of which are harmless to health.

Contaminants are introduced into pool water from a number of sources — the air, rain and bathers. Swimmers probably contribute the largest quantity of harmful bacteria. These germs must be rapidly destroyed or removed from the pool. Contaminants such as bacteria, viruses and algae are destroyed by disinfectants and algicides. Others, mainly suspended matter, are removed from the pool by passing the water through a filter.

### ALGAE

One of the most persistent problems in maintaining a swimming pool is that of preventing the growth of Algae. Vinyl lined pools with their smooth walls are least susceptible to algae growth.

Algae are small plants that grow in water. The air contains millions of algae spores ready to infest your pool. Heavy rains infest pools with windborne algae spores. In-

tense sunlight is very conducive to their growth.

Ordinarily, properly maintained chlorine residual will prevent algae from developing, but occasionally an increased dose of chlorine may be necessary if the algae becomes resistant to the normal chlorine level.

### CHLORINATION

Chlorine is added to pool water for two basic reasons:

1. To kill bacteria and algae.
2. To burn out undesirable organic matter, colours and odours.

The methods of applying chlorine vary. It may be administered in a powder or a liquid form. The powder being calcium hypochlorite, or the new cyanurate chlorine, and the liquid being sodium hypochlorite. They are both easily obtained and handled, and are introduced either directly into the pool or dissolved in water and applied through a metering service. The disadvantage is that they alter the acid-Alkaline balance, known as the Ph. The calcium and sodium chlorine salts are both Alkaline and constantly raise the Ph, necessitating the use of acid to bring the Ph back to neutral. The cyanurate chlorine products, however, do not have this characteristic, and when combined with a stabilizer, give by far the most constant and satisfactory protection available on the market today.

### FILTRATION EQUIPMENT

The basic principle of filtration is a recirculation system in which the water is drawn from the pool and pumped through a filter which removes suspended solids and returns the water to the pool again. The water is drawn simultaneously from the main outlet at the bottom of the pool and from the surface of the pool, through an Automatic Skimmer. The latter is very necessary because the surface tension of the water holds a considerable amount of impurities, e.g. hair, flies, bugs, suntan oil, etc., and this will only be removed if an automatic surface skimmer is used which incorporates a floating wire. After filtration, the water is returned to the pool through a number of inlets, depending on the size and shape of the pool. Care must be exercised in placing inlets so that filtered water displaces unfiltered water. One inlet should be directed towards the entry steps of the pool. The skimmer should face the prevailing breeze.

### TYPES OF FILTERS

There are two basic types of filters available, the sand and the diatomaceous earth filter. The sand filter design has been refined so that silica sand can now be used, with flow rates of up to 20 gallons per minute, per square foot of filter surface area, resulting in much smaller and more compact design, and the elimination of the coarse sands and gravel. The great advantage of the sand filter, provided the correct type of silica sand is used, is that the filter media is permanent.

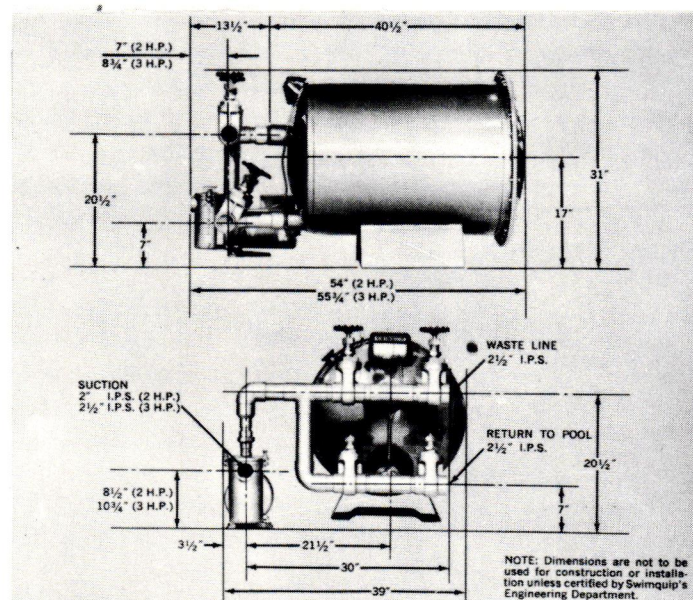
As the solids are filtered from the pool water and are retained by the sand, more pressure is required by the pump to force the water through the filter. When the pressure increases 5 lbs. per square inch above the normal working pressure, i.e., when the filter is clean, then it is time to backwash. With the modern sand filter, this merely requires the turning of a valve to reverse the flow in the filter which



washes the debris from the filter away to waste. When the waste water runs clear, the valve is returned to "filter" position and normal operation is resumed. The whole backwash operation takes only 3 or 4 minutes.

Diatomaceous earth is a powder made up of minute silica skeletons of tiny pre-historic marine life, and this powder is used to coat nylon and plastic elements inside this type of filter. This powder, when properly coated over the elements, acts as the filtration media and is extremely efficient in this function. The disadvantage of this filter is the relatively high maintenance costs, mainly in the replacement of filter powder. Also, the nylon and plastic elements are delicate and prone to damage by careless handling. The backwashing operation is the same in principle as the sand filter, but takes more time and very much more care. After backwashing, a new application of filter powder must be made either by suction of a slurry, through a special hose into the pump, or by feeding the powder into the skimmer. It is most important that the correct amount of filter powder be used. If too much is used, the coating on the elements will be too thick. This will result in a short filter cycle and unnecessary expense. If too little is used, the nylon covering of the elements will then have to act as the filter media. These cannot be cleared by the normal backwashing operation. The elements will have to be taken out of the filter and cleared manually resulting in extra wear, time and trouble.

There is little difference in cost between the two types of filters. In general, if the home owner is prepared to devote personal attention to the filter equipment, a diatomaceous earth filter is very satisfactory; but if the operation is left to occasional unskilled attention, a sand filter is the better choice. Some equipment suppliers provide a maintenance service for an extra monthly charge.



**SAND FILTER**

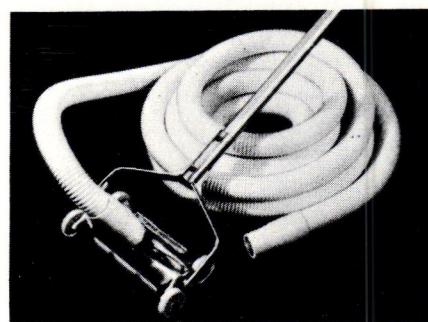
#### MAINTENANCE EQUIPMENT

The filtration system will only extract solids from the water if they are in suspension. If, therefore, debris is allowed to settle on the bottom of the pool where the turbulence from the returning inlets is insufficient to keep it

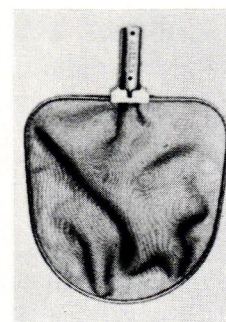
moving, then the bottom of the pool will have to be cleaned manually. If the quantity of debris is small, and recirculation turnover is high, then the bulk can be removed by using a pool brush on an aluminium handle. The brushing should be done in the direction of the main outlet, after the valve controlling the skimmer has been closed. This is to provide the full suction rate through the main outlet.

More thorough cleaning is effected by vacuuming the pool. This in principle, is the same as an ordinary household vacuum cleaner. A hose is connected to the suction line of the filter pump, either through a special vacuum fitting placed into the wall of the pool, or in the case of more advanced equipment, through a connection in the surface skimmer. The hose is coupled to a vacuum head on an aluminium handle. The vacuum head runs on wheels and carries a small brush which will loosen the debris on the bottom. This dirt is then carried through the hose back to the filter.

Other maintenance equipment include a leaf skimmer for removing leaves, etc., which are too large to pass through the vacuum cleaner. A chemical test set should be used to determine the chlorine residual and the Ph of the water.



**VACUUM CLEANER**



**LEAF SKIMMER**

#### OPTIONAL EQUIPMENT

Underwater lights may be required. They add greatly to the attraction of the pool after dark. Great care, however, must be used in connecting the light into the electrical system. Brass conduit and specially manufactured junction boxes are an absolute necessity, together with rubber seals, grounding screws, etc. Only approved electrical equipment should be used and only licenced electricians should be allowed to carry out the installation.

Ladders, hand rails, diving boards are other optional equipment.

#### MATERIALS

In general, the tendency in the industry is to avoid using any metal fittings in the pool, because of electrolytic action. If there are any high tension electrical systems in the vicinity of the pool, or, if the pool is on high ground, these tend to increase electrolytic action. This results in tarnishing of rails and the stripping of chrome from the main outlet gratings.

Most filters carry sacrificial anodes, in the filter drum. These should be located and checked at regular intervals



and replaced when necessary. Their purpose is to concentrate the electrolytic action on these anodes themselves and help stop action on any other metal components in the pool or in the filtration system. In quality pools it is now common practice to use P.V.C. plumbing pipes. These are manufactured in Jamaica. In the pool itself, cycolac fittings are now used rather than metal fittings. Cycolac is a very tough plastic, and is used for main outlets, frames and grates, skimmers and inlet fittings. Cycolacs can be coupled with the P.V.C. piping by using a solvent, no threading being required.

Ladders are being replaced by grab rails. These are attached to the deck and no metal part touches the water. Instead, a set of plastic steps are built into the wall of the pool. They eliminate any corrosion problem, yet are just as comfortable to use.

A final check list of the equipment required for the normal pool would be as follows:—

### FILTRATION EQUIPMENT

1. Filter including pump and motor
2. Automatic Surface Skimmer
3. Two or more adjustable Eyeball inlets
4. Main Drain outlet with frame and grate

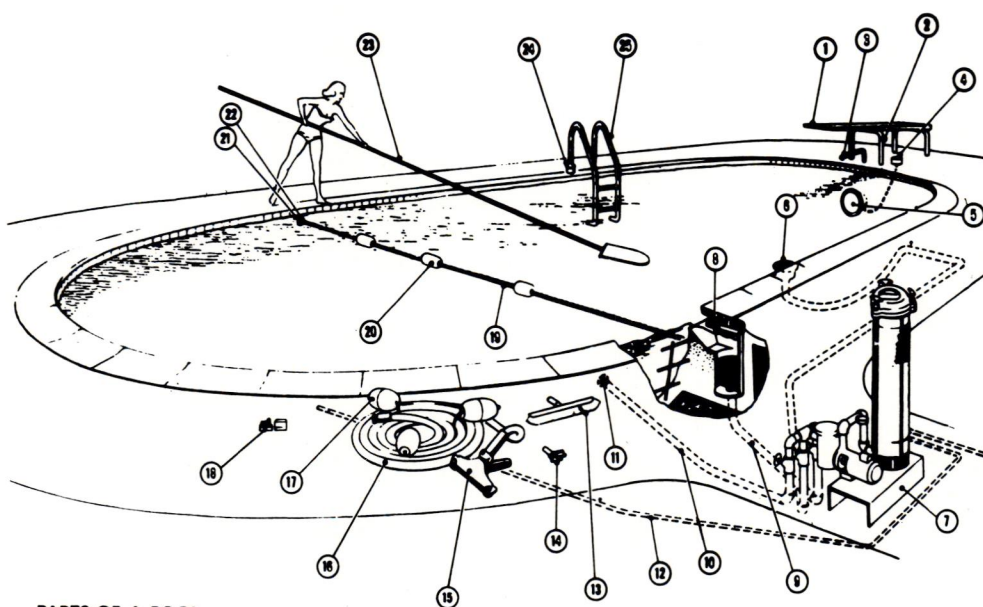
### MAINTENANCE EQUIPMENT

1. Vacuum cleaner together with hose and handle
2. Pool Brush
3. Leaf Skimmer
4. Chemical test set
5. Aluminium Handle for the leaf skimmer or brush

### OPTIONAL EQUIPMENT

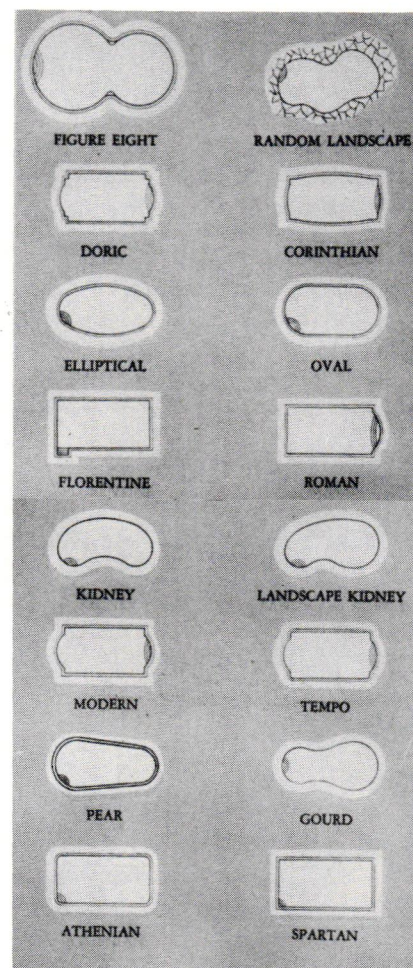
1. One or more underwater light with conduit and junction box
2. Grab rails and steps or ladder
3. Hand rail for use at shallow end, entrance steps
4. Diving board and standard.

One other useful item of equipment is the automatic time starter switch. The number of hours that the filter has to be run in order to keep the pool water clear, will depend entirely on the usage of the pool, and it will be found that the number of hours running can be cut down radically at certain times. The time starter switch can be set to turn the filter on and off without the worry of having to do this manually, The result being a considerable saving in electricity.



**PARTS OF A POOL**

- |                               |                             |                        |                                |
|-------------------------------|-----------------------------|------------------------|--------------------------------|
| 1—Diving Board                | 7—Centri-Mite Water Filter  | 13—Pool Brush          | 19—Pool Life Line              |
| 2—Diving Board Standards      | 8—Automatic Surface Skimmer | 14—Special Algae Brush | 20—Life Line Floats            |
| 3—Pool Fill Spout             | 9—Skimmer Suction Line      | 15—Vacuum Head         | 21—Cup Anchor                  |
| 4—Pool Light Deck Box         | 10—Vacuum Suction Line      | 16—Vacuum Hose         | 22—Rope Hook                   |
| 5—Underwater Light            | 11—Vacuum Fitting           | 17—Vacuum Hose Floats  | 23—Surface Skimmer             |
| 6—Main Drain and Suction Line | 12—Filter Return Line       | 18—Water Test Kit      | 24—Wedge Anchor and Escutcheon |
|                               |                             |                        | 25—Pool Ladder                 |





# LANDSCAPING,

## *The Living Terrace*

*by James E. Voss*

The ideal solution for increasing your living area, without the expense of building a new house, is to add a living terrace. Nothing blends more beautifully with the interior of a home than its natural extension outside. With the proper foreground setting, the beauty of a garden or distant view is magnified many times.

There are certain fundamental ideas that should be followed in the terrace development.

### FIT THE PERSONALITY, NEEDS, DESIRES, AND ACTIVITIES OF THE OWNER.

If it's formal living that is preferred, use the symmetrical design for the terrace. Remember, the symmetrical design in planting requires more maintenance. Be sure the terrace size is adequate for the amount of entertaining and activity that is to take place. If a future pool or room addition is planned, this should be included at the planning stage.

### PROVIDE AN INTERESTING AND INVITING VIEW FROM THE HOME INTERIOR.

Your terrace will be viewed from the interior many more times than it will actually be used. Make sure it is a pleasant experience as the eye is carried to the surrounding garden or the views beyond.

### INCLUDE AN INTERESTING TREE FORM ADJACENT OR IN THE TERRACE TO FRAME THE VIEW BEYOND, GIVING SHADE PROTECTION AND SHADOW PATTERNS.

The artistic growth of the Calabash is an example. With proper trimming even large shrubs could be used if the stems have some irregular shape with interesting branching. The lower branches of these specimen plants should be trimmed to allow walking room beneath and high enough to be above the eye level resulting in a frame view beyond.

### CHANGE THE ELEVATION OF TERRACES FOR INTEREST.

A terrace at more than one level is most exciting on undulating land. When the problem is a considerable change in elevation from the house to ground level it becomes practical to use multiple terrace levels to break the monotony of numerous steps. This solution adds to both the safety and aesthetic value.

### PERMANENT TERRACE ACCESSORIES.

Wood or stone benches contribute to the inviting view of a terrace. Especially when retaining walls are used for a change in elevation, the wood bench blends beautifully with the terrace structure, as well as with the planting. The built-in B-B-Q can many times be combined with the bench or retaining wall. Trickling water-falls, the fountain, or the still reflecting pool may also add to the terrace enjoyment.

### CONSTRUCTION MATERIALS MUST BE HARMONIOUS WITH EXISTING HOME STRUCTURE.

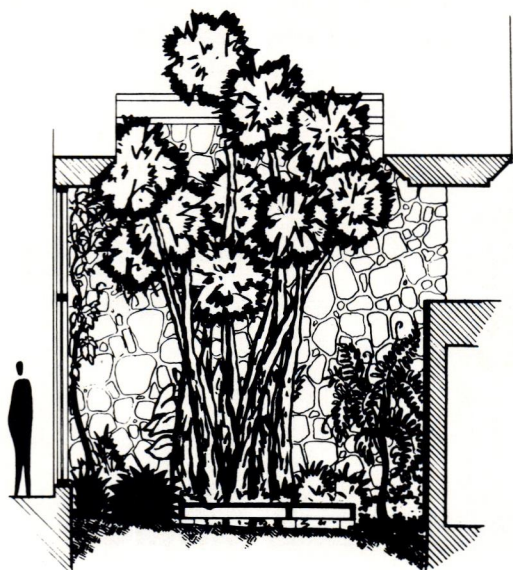
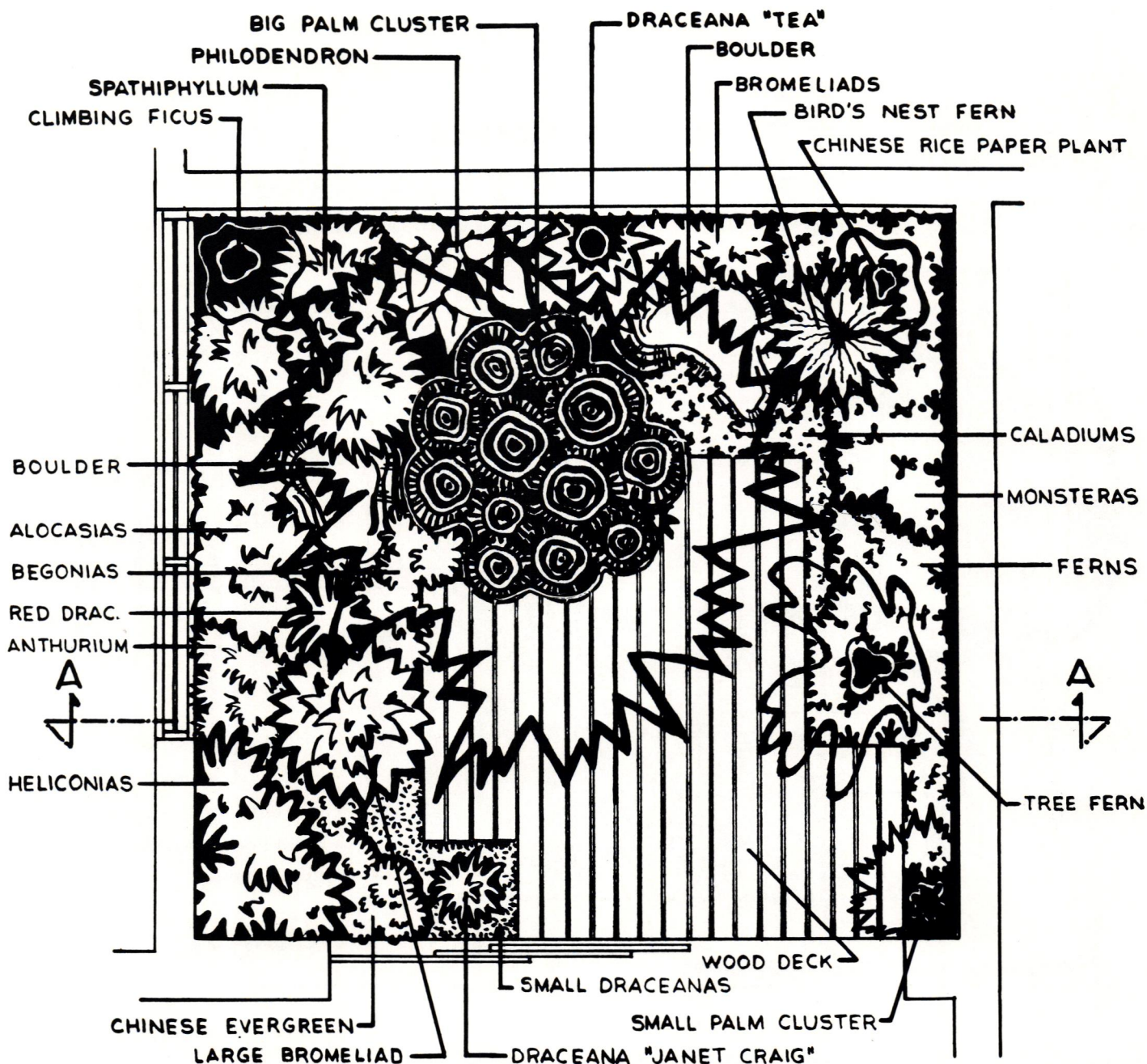
If the home is stucco, then tinted concrete with a scored design would be most effective. When brick is used somewhere on the home it blends beautifully when used as the terrace floor. A random stone pattern is most fitting for a terrace when the stone is used in the building construction. A wood strip bench blends nicely with any of these materials.

### USE INDIGENOUS PLANT MATERIALS.

Plant material indigenous to the area is most practical in terrace planting. The terrace design is basic, but the frosting is the simple use of plant material for softening and for colour masses. The use of green masses with spots of colour will allow the eye to float from one focal point of colour to another.

With these ideas in mind let's look at a few examples of terraces used in the past. One is an interior tropical patio most fitting in this area.

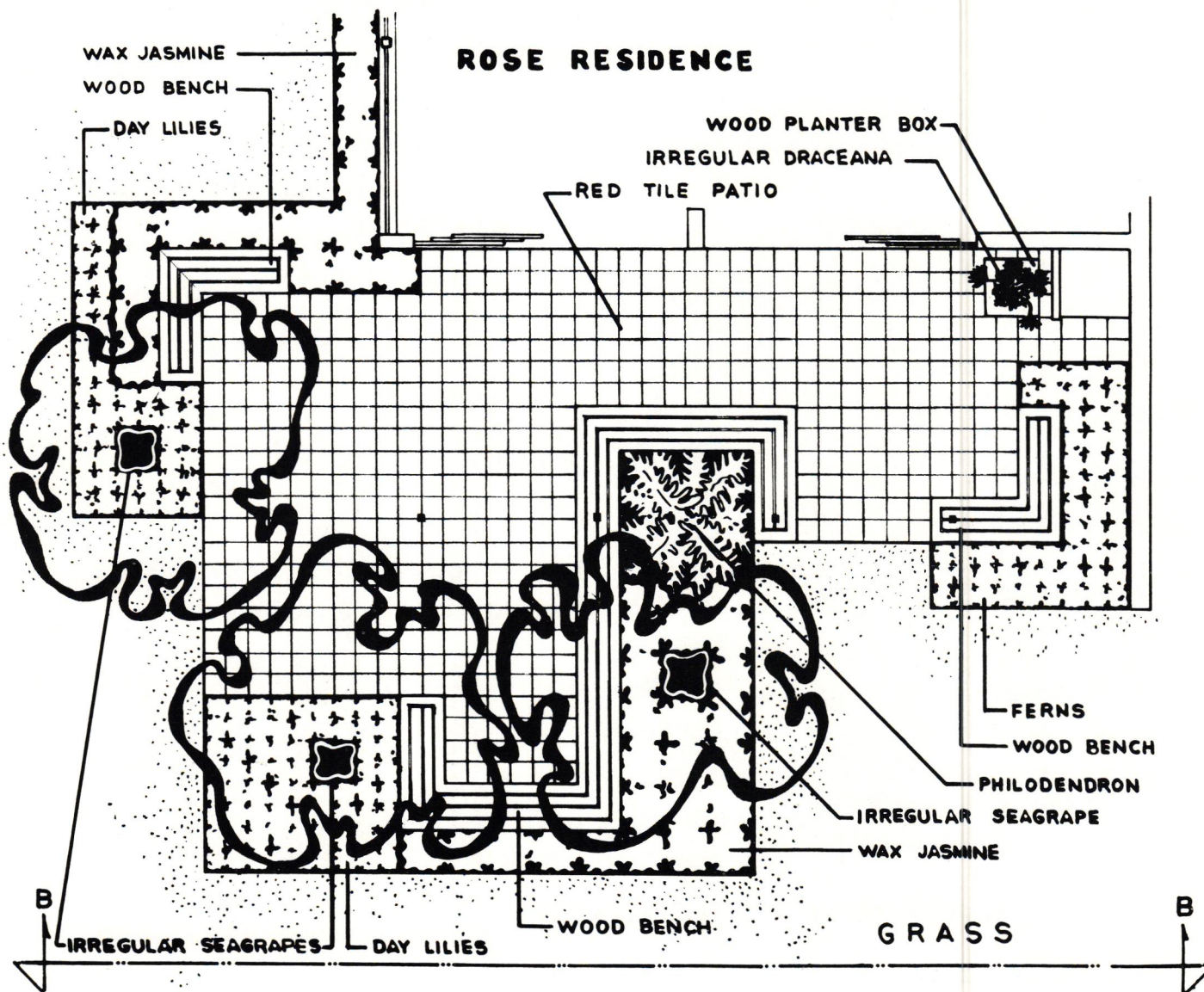




## TROPICAL INTERIOR PATIO

*In this interior tropical garden an opening in the roof allows the beautiful cluster palm to provide a break in the hard roof line from the outside as well as furnishing broken shade and a rough trunk interest to the tropical planting below. The small wood deck allows a quiet sitting area among the lush tropical setting of Fern, Philodendron, Heliconia, Draceana, Anthurium, Bromeliads, Spathiphyllum, etc. This garden is enjoyed both from the large living room and quiet den.*

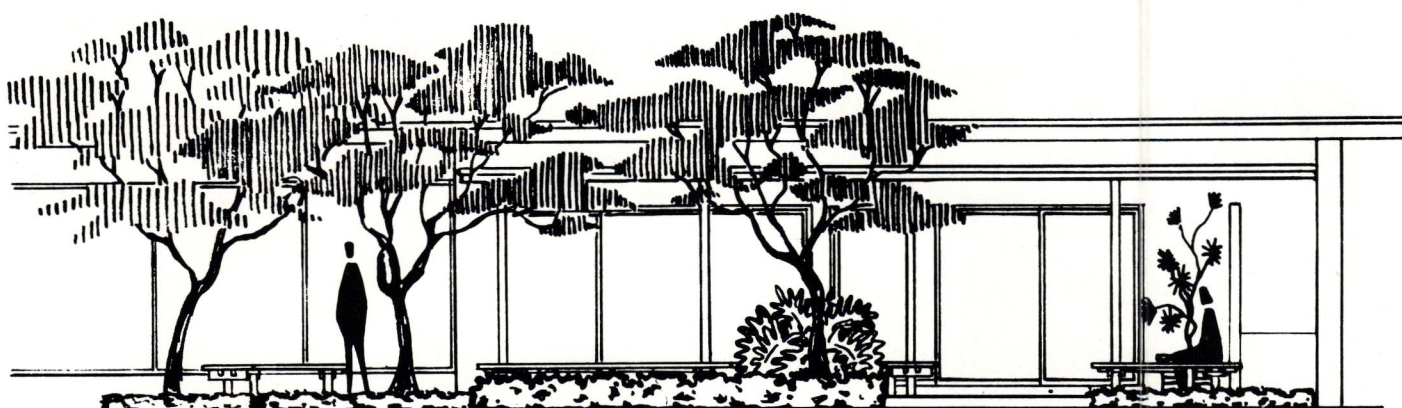




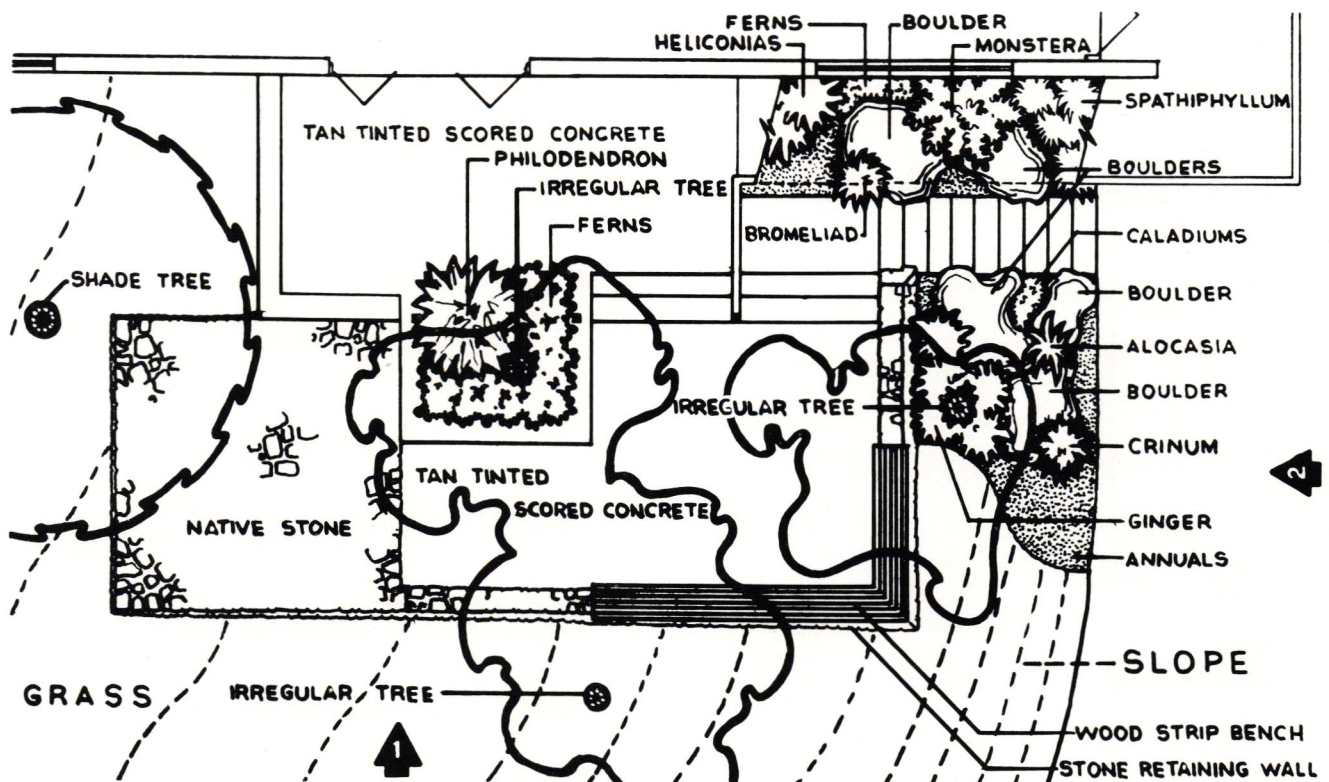
### TERRACE NUMBER ONE (ROSE RESIDENCE)

*This terrace flows out of the living area with the matching red tile surface of the interior. Irregular trunk Seagrape Trees provide shade and shadow patterns while framing the view to the garden and water area beyond. The tropical Philodendron and Fern soften the wood benches with Day Lilies adding spots of colour*

*and blending with the soft fluffy Wax Jasmine. Large openings in the planting provide controlled access to the grass beyond. The interior view immediately extends the living room outside beckoning the user to the beauty and serenity of our beautiful surroundings.*

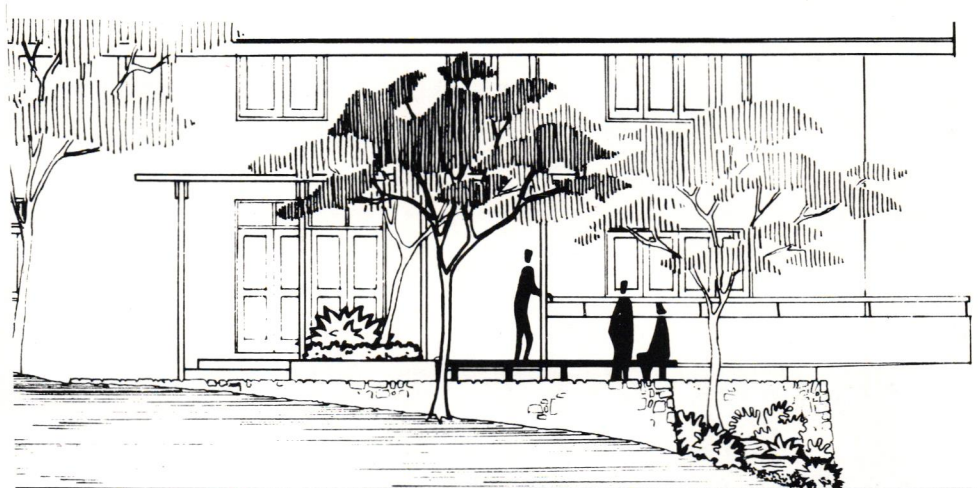






## TERRACE NUMBER TWO

*Here we portray the pleasant results of multiple level terraces carrying the user from the house to the lower entrance drive. Steps are joined to flat boulders, softened by draping plants with spots of colour. These wood benches mounted on the stone retaining walls are inviting and restful. Trees drawn up near the house, frame the distant view as well as provide shade and shadow patterns.*



**SIMPLICITY OF PLANTING AND THE PROPER TERRACE PROPORTIONS MUST BE COMBINED FOR TOTAL USE AND VIEWING ENJOYMENT.**



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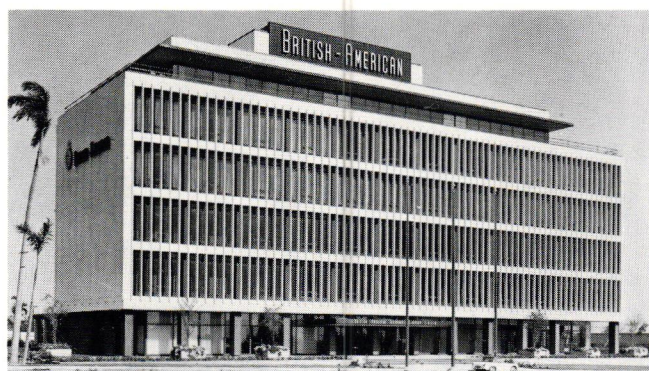
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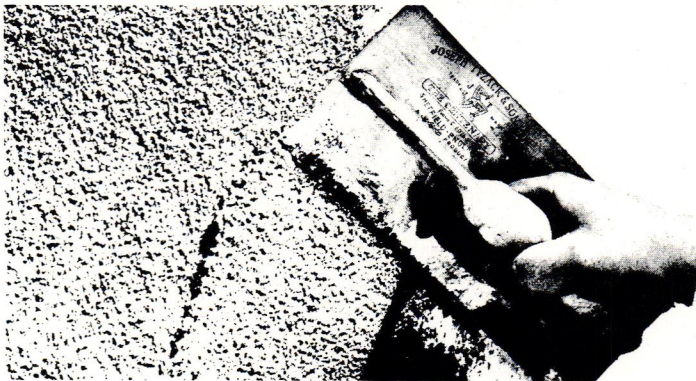
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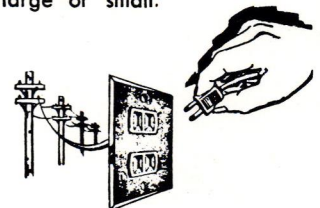
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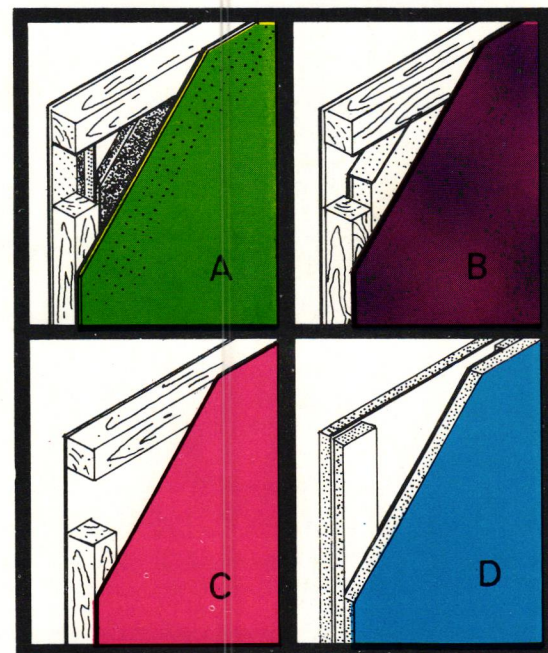
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## Practical Interior Walls

As the building industry of any country becomes pressed to put up structures at an ever increasing rate, the industry must revise the products used in construction and methods of building, and try to use substitute materials and/or methods which allow for quicker building without affecting the quality and function for which the structure is intended, and which at the same time fits into the budget.

It is very often necessary to wait on the erection of interior walls during construction, until they are sufficiently dry and therefore sufficiently strong before proceeding with other construction work which depends on such walls. The elimination therefore of as much of the waiting time inherent in concrete construction has resulted over the last 15 years in the development of numerous drywall systems. We in Jamaica can now take advantage of these developments to improve the speed of erection and efficiency of our construction.

Drywall systems generally have framings of steel, aluminium or timber, clad with panels of composition boards of paper, pulp, or wood chips, plywood, glass, metal and most often gypsum wallboard. Quite often these are pre-finished with a veneer or Vinyl surface, or else painted. Cores of walls are made up of materials like Gypsum wallboard, fibreboard, fibreglass and plastic foam.

The materials on their own, of course, have certain disadvantages when compared with concrete, which should be taken into account, such as sound transmission, thermal insulation and impact resistance. Technical information is available to guide us in choosing the combination of materials, size and spacing of frames, types of core, etc., necessary to give us a satisfactory wall.

The cost of such walls locally ranges from 7/6 to 25/- per sq. ft. supplied and installed. As a guide for comparison a 4½" thick gypsum taped and painted steel stud partition with an STC 43 rating, supplied and installed, costs approximately 9/6 per sq. ft., and can be erected on a volume basis at 15 sq. ft. per man hour. Such a wall weighs approximately 8 lbs. per sq. ft.

The walls are in every way as functional as traditional walls and are often better. Services such as telephone, electricity and water can be hidden

conveniently in the drywall and remain forever easily accessible for repairs and maintenance. Since the walls weigh considerably less than regular walls, designing with these in mind can result in considerable savings. These walls are often semi-demountable or fully demountable, and can therefore be relocated as conditions change, at a fraction of their original cost, with minimum inconvenience, and therefore allow tremendous flexibility in the use of the building.

When we take all this into consideration, the functional aspect, the speed, the flexibility and certainly the lasting highly decorative effect and ease of maintenance that can be achieved by using Partition Walls, one can readily see why today's interior walls in so many countries are often of this type.

Buildings go up quicker, they are just as good and often better, they are more flexible and easier to maintain. The age of drywall construction is here.

*Ryan G. Peralto.*

## Chemical Treatment of Lumber Products

Wood has always been a pre-eminent construction material. Its availability in various forms and sizes together with such properties as relatively great strength with respect to weight, ease of shaping and fastening, low heat conductivity and sound-deadening qualities, have made it a superior building material throughout the ages.

Outstanding among the practices that have been developed to improve the usefulness of wood is the chemical (preservative) treatment of structural timbers and various other wood products used in construction under conditions that favour their early deterioration by decay, insects and certain other destructive agencies. The primary objective of the preservative treatment of wood is to increase the life of the material in service, thus decreasing the ultimate cost of the product by avoiding the need of frequent replacement in permanent and semi-permanent construction.

One method of wood preservation is by the use of Water-Borne Salts; one of these salt formulations is derived from Dr. K. Wolman, a German scientist. Since his early days, through progress and research, present day salts known as Wolman CCA have been

formulated, CCA — Chromated Copper Arsenic — Potassium Dichromate, Copper Sulphate, Arsenic Pentoxide.

The pressure treating process used in Jamaica is the 'full cell' process, which ensures that the lumber absorbs as much preservative solution as it can take. For use in Tropical countries under normal conditions a retention of half a pound of dry salts per cubic foot is used. Higher retentions are used for lumber where used in more hazardous conditions, namely in the earth or in constant moisture contact.

The lumber is sorted, placed on stickers 4'-6" long x ¾" thick, made up into packages and pushed into a sealed cylinder 80 ft. long. A vacuum of 26" hg. is drawn for one hour. This empties the wood cells of air, preparing them to receive the preservative. During the last fifteen minutes of vacuum, the cylinder is filled with preservative solution. The vacuum is then broken and pressure is slowly applied up to a maximum of 175 lbs. per sq. inch. This pressure is maintained until refusal, i.e. until the lumber refuses to absorb any more solution. The lumber is then removed from the cylinder and allowed to air dry for thirty to forty days. As this is a water borne salt treatment, this period of air drying is essential to ensure that the moisture content of the treated lumber is reduced to 18%, or equilibrium moisture content.

A further treatment to defeat the fire hazard of lumber has been evolved. This treatment is also a water-borne salt treatment and the process is identical to that previously described. Fire Retardant salts — CZA — Chromated Zinc Chloride.

A salt retention of three to five lbs. per cu. ft. is calculated for this process. This treatment also provides a high degree of protection against insects and decay.

In the U.S.A. Fire Retardant treated lumber is used wherever lumber is preferred and a low combustible building material is required. It has an insurance underwriting as low and in some cases lower than a building of steel or concrete and its use is becoming more widespread.

Fire Retardant treated lumber reacts automatically when attacked by flames. At temperatures below the normal ignition point of untreated wood, the inorganic salts release non-combustible gases and water vapour from the wood to reduce the inflammable



gases and tars, and other portions of the treatment cause the wood surface to insulate itself in a hard layer of carbon char, thus retaining the material strength.

Research into the use of Fire Retardant lumber in Tropical countries where high humidities are experienced, is continuing. Tests are also being carried out on its paintability and other finishes.

Now that it is possible to defeat lumber's natural enemies — termites, rot, decay — by the use of chemical preservatives, we may expect a steady increase in the use of wood as a construction material in the future. Though increasing the initial cost of a building, the use of Pressure Treated lumber will ensure a considerable saving in maintenance over the years, since it will outlast many times the life of untreated wood.

— David Henderson

Parking

An Inquiry into some aspects of the requirements of the Island's Development Orders.

Building is expanding, automobile ownership is increasing — against a background of streets not originally planned to cope with the resultant heavy traffic, both mobile and stationary.

Where the public transport system

is inadequate, more private vehicles circulate on the streets and it becomes necessary to accommodate stationary vehicles off the street so that traffic may flow easily. Apart from the space which parked vehicles occupy, every parking movement holds up traffic.

One of the important factors that any developer has to consider is the accommodation of vehicles connected with his enterprise.

The parking requirements under the various Development Orders which have been promulgated under the Town and Country Planning Law make it compulsory for all new developments to include provision for parking (and loading where appropriate), on the basis of minimum parking needs. For instance, for every 500 square feet of office space there must be one off-street car parking space. Commercial undertakings require double this amount. The whole gamut of vehicle parking requirements, in relation to the various types of development, can be found set out in the Schedule to the Development Orders.

A look at any existing building with no parking area will show that there is not enough kerb space for both staff and clientele. As a result, many existing offices in the downtown Kingston area have car parks for their staff, thus leaving the kerb space free for clients to park.

The disadvantage of having inadequate parking facilities is illustrated

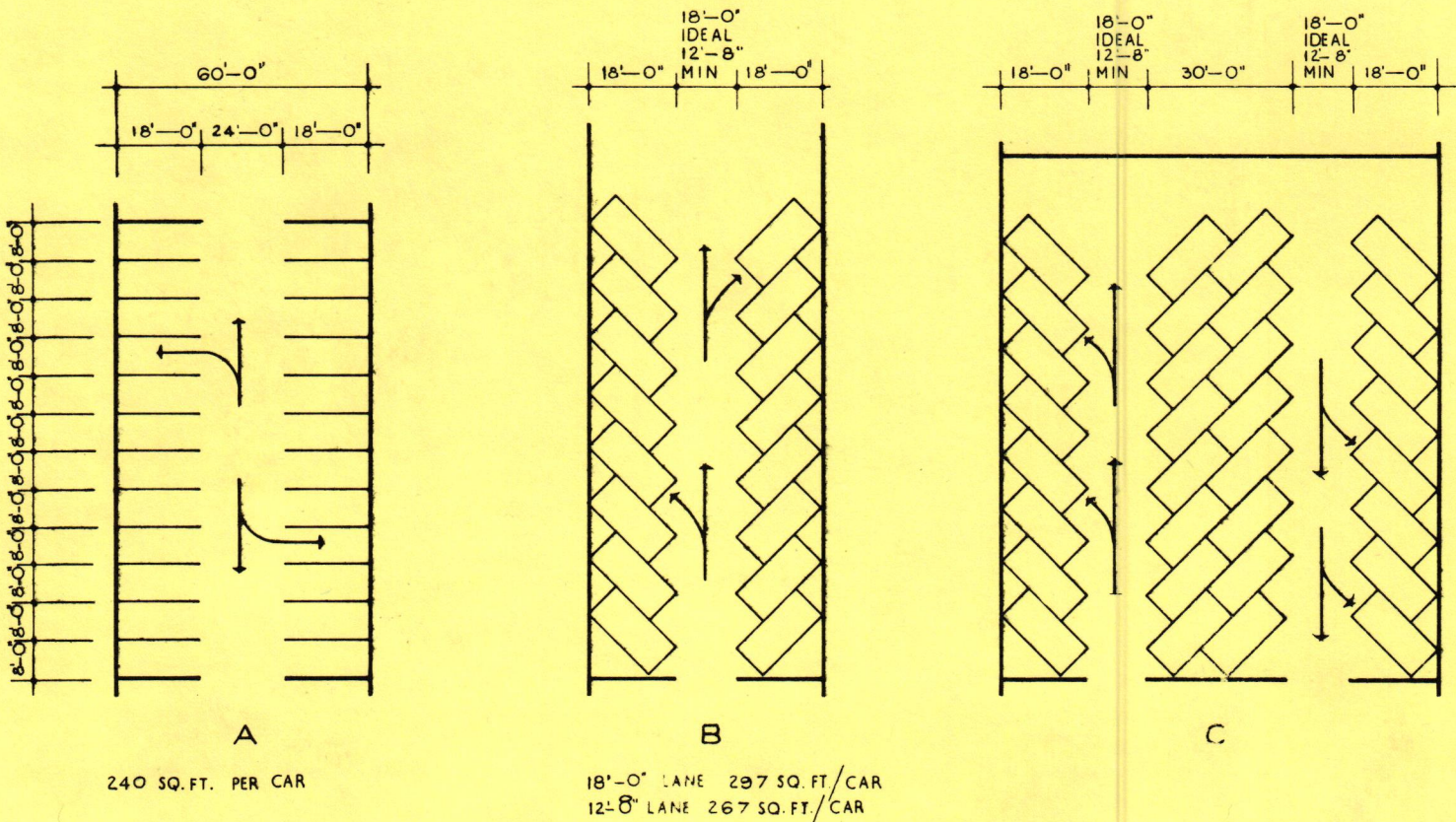
by the loss of much downtown trade, and the shifting of business to areas which are less convenient in other respects, but attract clients because of parking facilities.

Limited street parking demands well planned car parking lots. Of the two possible layouts for car parks, 90° parking has the advantage over angle parking. Although the latter may involve a smaller area per car, 90° parking gives greater manoeuvrability. A car park with 90° parking and centre lanes for two-way movement, using a 60' module for two ranks of cars and a centre lane of say 20', each car space being 8' wide, gives a figure of 240 square feet per car.

Because of the general lack of street-level space, the ultimate answer to keep a city compact will be a combination of multi-storey car parks, strategically placed — for long and medium stop parking, and underground parking, if drainage problems can be solved. Ground floor parking is a practical solution, but limited by the number of active floors above.

Public funds are not sufficient to provide the alternative to free parking at one's doorstep. The only solution is for the developer to make every effort to ensure adequate provision for parking. It is in his own interest, as a patent economic necessity, to do so. Car ownership grows, the streets do not.

— Elizabeth Causwell





## DOMESTIC WATER HEATERS

Much has been written and spoken of the advantages of various appliances for heating water. Without a proper technical understanding of the several factors involved, one can easily be led astray by convincing arguments in favour of one method or another. Unlike cooking, when much depends on the cook's own ability, the ingredients of the food and the techniques used, in water heating there is more science than art.

Unit quantity of heat can be defined as the heat necessary to raise unit mass of a given substance through one degree of temperature. In more conventional terms, ten British Thermal Units (B.T.U.) will raise the temperature of one imperial gallon of water through one degree fahrenheit. If, therefore, we need to raise the temperature of one imperial gallon of cold water through 100 degrees (say from 60°F to 160°F) then it will require (100 × 10) B.T.U.'s. imparted to the cold water. All fuels have a definite heating value, which expressed in B.T.U.'s. per unit mass, e.g. natural gas 1000 B.T.U.'s/cubic ft., liquified petroleum gas 21,000 B.T.U.'s./lb. and electricity 3,412 B.T.U.'s./Kw. hr. (usually referred to as a "unit"). Thus we have a basis for calculating the quantity, and subsequently the cost of heat units we buy to heat the water we require. This is not, however, a complete answer to the problem. The methods by which we impart the heat to the water are not equally efficient, nor are they equally convenient. Selection of a water heater, therefore, becomes a question of individual analysis of what is required, and as hot water usage is so variable, no intelligent recommendation can be made without such an analysis.

Leaving aside the more primitive methods of heating water, the modern trend for average domestic and small commercial applications has been towards either an automatic storage heater or the so-called instantaneous water heater.

**Storage Water Heater:** This type heats water held in a storage tank either by an immersed electrical element or by a gas burner mounted underneath the tank. Thermostatic controls provide an automatic reheating of the tank when hot water is withdrawn and the replacement cold water lowers the temperature below a preselected level. Possible disadvantages of this type of water heater are:

- (1) It can only supply immediately a volume of hot water equivalent to the size of heater installed. This means that where large volumes of hot water are required only at given times, the heater itself must be of large capacity.

- (2) For the electric type, a quick recovery from cold to hot water means a heavy and expensive cable to take the electrical load.
- (3) Unless the storage tank is efficiently insulated, thermal losses during stand-by period can result in high fuel cost.

**Storage Water Heater — Sizing:**  
General method based on size of house:

Number of bathrooms	Number of bedrooms	Storage Capacity (gallons)
1	1 or 2	30
1	3 or 4	40
2	2 or 3	40
2	4 or 5	50
3	3	50
3 or 4	4 or 5	75

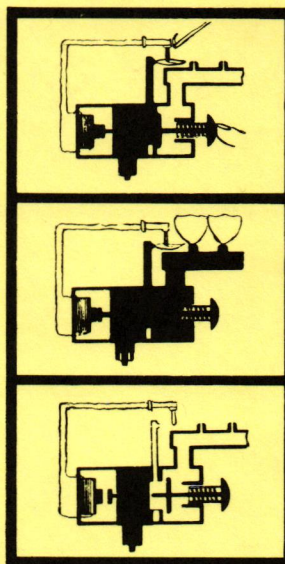
**Capacity versus Demand Method:**  
For any given demand approximately 70% of storage capacity is immediately available as hot water. The heater then has to "recover", that is, the cold water entering the tank to replace the hot water withdrawn has to be heated. The "recovery rate" of a water heater is the number of gallons of water it will heat in one hour. This depends on the B.T.U. input to the burner, the efficiency of the heater and the number of degrees that the water has to be heated to. Under average conditions the recovery rate is approximately one gallon per hour per each 1000 B.T.U. input.

The following are typical recovery rates for various size heaters:

Size	Heater Input	Gallons of hot water available in:			
		1 hour	2 hours	3 hours	4 hours
20 gallons	24000 B.T.U./hour	36	59	81	103
30 "	27000 " "	46	71	96	121
40 "	34000 " "	60	91	124	155
50 "	40000 " "	72	109	147	184
60 "	47000 " "	86	129	173	217

### Instantaneous System

### How the thermoelectric automatic pilot works



#### Starting position:

The gas supply to the pilot burner is released through depressing the push-button. The pilot flame heating the thermocouple causes a thermocurrent to be generated which in turn keeps the armature of the shut-off valve attracted to the magnet within a few seconds.

#### "ON" position:

Upon release of the pushbutton, the magnetic valve remains open and gas can proceed to the main burner. The pilot flame lights the gas issuing at the main burner.

#### "OFF" position:

If for some reason the pilot flame goes out, then thermocurrent is no longer generated and the magnetic valve snaps shut. The entire gas supply is thus cut off, and no unburned gas can escape at the main or pilot burner.



Domestic hot water requirements will vary considerably but the following are typical figures:

Application	Gallons of hot water required
Tub bath (adult)	10 — 15
Shower bath	8 — 12
Baby bath	3
Dish washing per person per meal	½ — 1
Miscellaneous cleaning per week	25 — 35
Washing machine per person per week	4 — 8
Automatic laundry per load	15 — 20
Personal toilet per person per day	1

*Instantaneous water heaters:* Instantaneous water heaters are generally classified as either "single-point" or "multi-point", the former being located at the point of usage and the latter providing a piped supply to various remote draw-off points in the same premises. The design is essentially a long coil of tubing or finned pipe with a large capacity gas burner below it. The flow of cold water entering the heating coil when a hot water tap is opened also actuates an automatic gas valve. In passing through the long coil,

the water is heated and a continuous supply of hot water is provided a few seconds after the hot water tap is opened. The overall efficiency of this type of heater is relatively high, particularly when large amounts of hot water are used at one time. It is completely automatic in operation, provides a continuous supply of hot water as soon as it is required and uses gas only when hot water is being drawn off.

In selecting the size of heater required, it must be remembered that instantaneous heaters do not have a storage capacity, and are specifically designed to heat the water only during the period when hot water is being withdrawn. It is therefore the required total rate of withdrawal, in gallons per minute, which has to be considered. Each appliance will provide a given maximum flow of water raised through 100 degrees fahrenheit, and a correspondingly larger rate of flow for smaller temperature rises. For example, assuming the cold water entering the heater is at 50°F, a large multi-point appliance could provide: 1.75 gallons per minute of water at 150°F (100°F rise) or 3.5 gallons per minute of water at 100°F (50°F rise).

Many models are fitted with a temperature selector which enables the



user to choose the temperature required simply by setting the selector knob to the desired position.

For improved overall efficiency, it is not recommended that supplies from a multi-point heater are taken at draw-off points which are exceedingly remote from the appliance. In such cases, single-point heaters should be installed at the isolated positions, or, if possible, the hot water system should be sectionalized and two or more multi-point heaters installed at centralized positions as dictated by the pipe runs.

To summarise, one can say that of the two basic methods of providing a hot water service, the storage principle is to heat water and store it, without waiting for the demand to occur. A thermostat is employed to turn off the heater when the storage tank is full of hot water. The instantaneous heater, on the other hand, provides heat to the water only when a draw-off is operated, and no water is heated when the demand ceases.

Under tropical conditions, water heating is generally less expensive than in colder climes, simply because much of the "cold" water is, relatively speaking, already warm and requires much less heat to raise the temperature to hot or boiling.

— by Ifor W. Evans

**Instant**

**+ = hot**

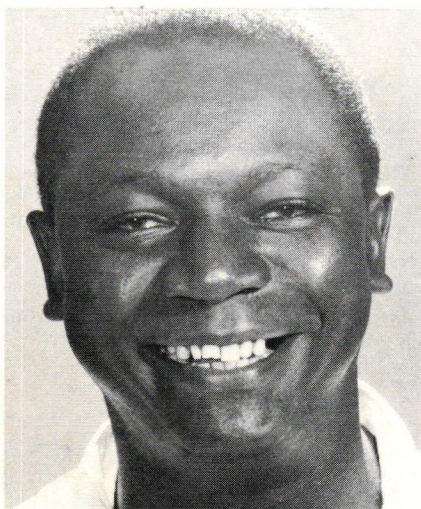
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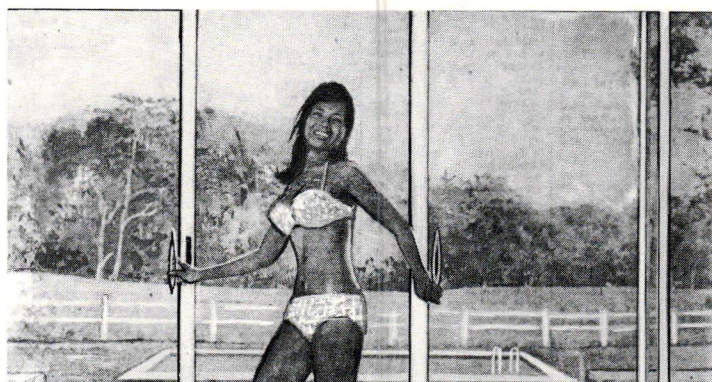
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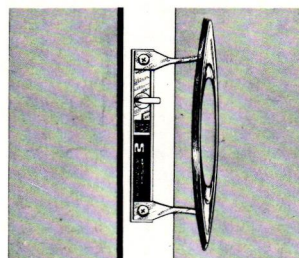
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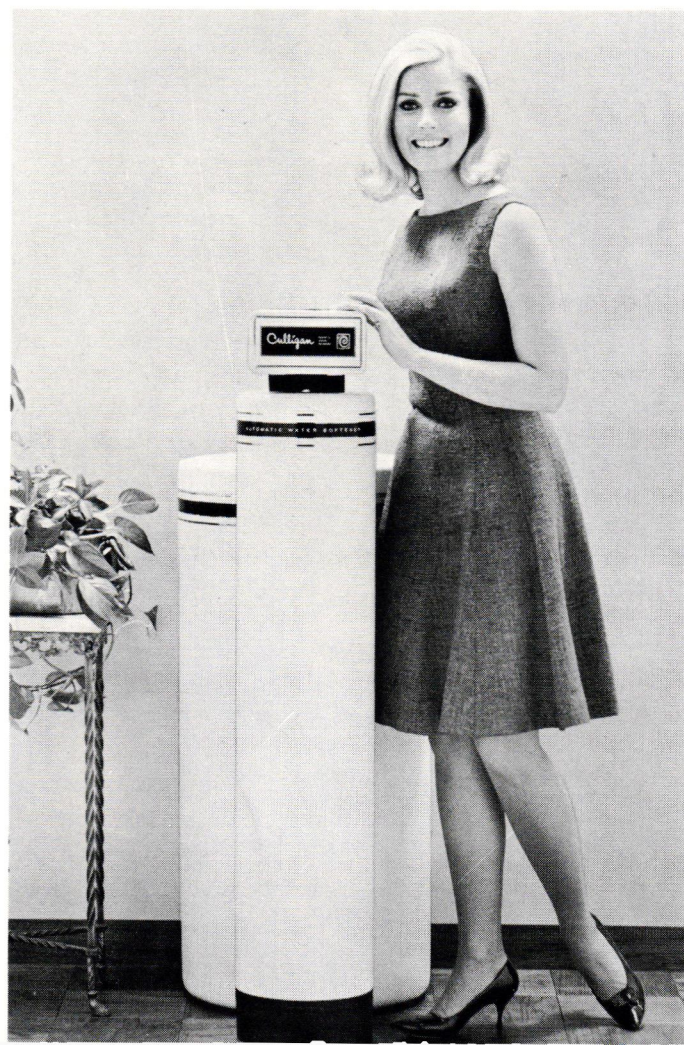
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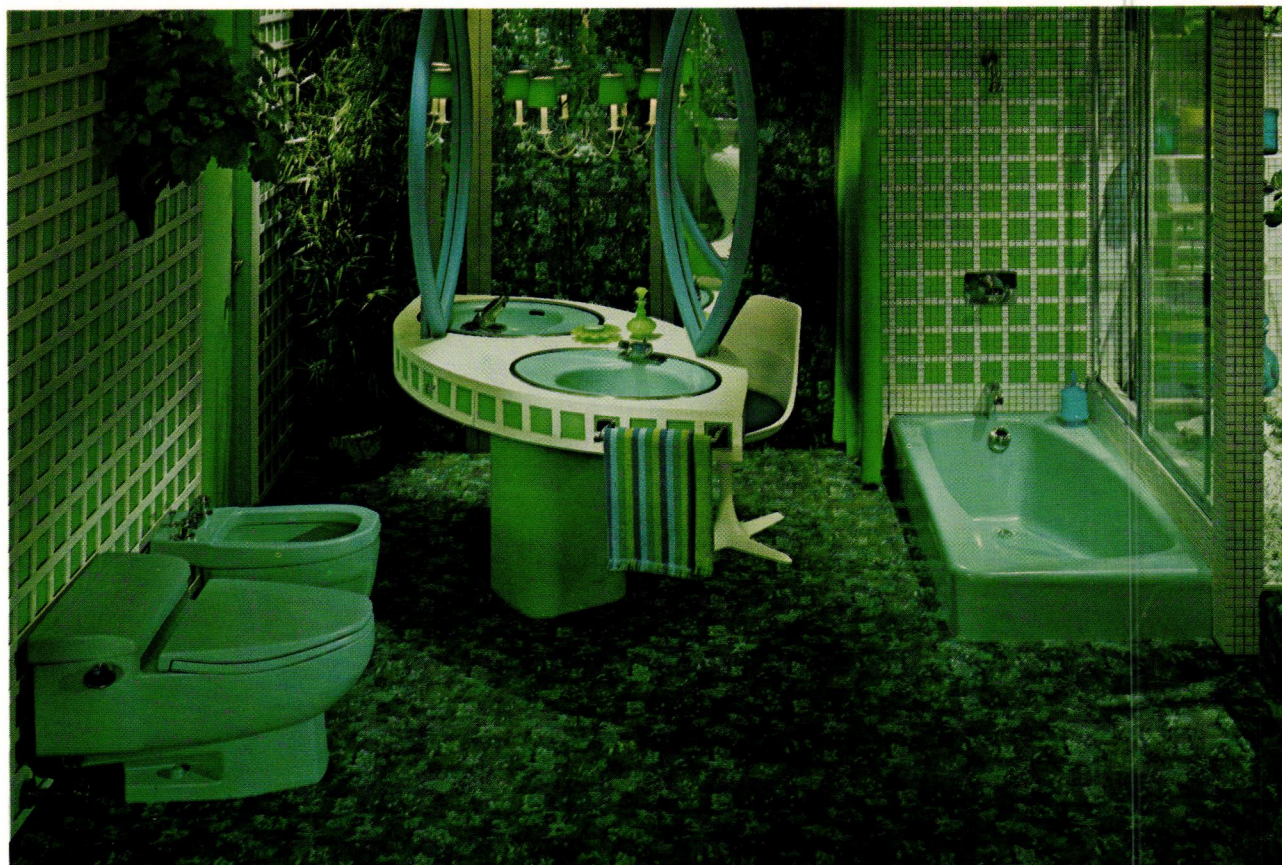
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# BATHROOMS & DRESSING ROOMS

*by Jeanne Shearer*

If you are searching for a cosy retreat, a place where there is order, tranquility, and harmonious communication with nature, you may discover that the bathroom offers all this and more these days.

It is a pity that the famous author who, a generation ago, boasted that his best writing was done in the 'drab discomfort' of a sterile bathroom, did not live to enjoy the inspired atmosphere which now encompasses this hallowed area.

Picture windows, balconies, private solariums, enclosed gardens, custom built storage walls, terrazzo, gold, crystal, ceramics, fabulous new plastics, sculpture and paintings, long restricted to other areas of the home, are now employed to create bath and dressing rooms of elegance and distinction worthy of their importance in a home.

Our hot climate lays even greater stress on the frequent use of this area and efforts are being made to stimulate interest in better designs for this heretofore neglected space.

Perhaps the greatest obstacle to overcome is the preconceived idea of what a bath-dressing room should be. Few of us have escaped the dark, windowless, clothing closet, or the bath built like a vault. We have resisted blindly, using excuses such as 'wasted space', or 'uneconomical', to discourage efforts on the part of architects, designers and/or interior decorators to lift us beyond the realm of a bit of colour and minimal attempts at compartmenting.

When, however, one is confronted with not only the sheer beauty, but the increased comfort and efficiency of a new-type bath and dressing-room, the mental cobwebs are quickly swept away leaving only the positive conviction that this is the way it should have been all along.

Humidity, to which most of us can testify, creates the 'bath after the bath' feeling, when you just can't seem to dry off, lotions and talcum not withstanding. It impedes dressing quickly, ruins hair-do's, and makeup efforts. Instead of being refreshed by a bath one often has to retire to some other part of the house to cool off and allow the bath to 'air' before proceeding. Although well placed windows and extract fans improve this situation the ideal solution is to increase the air circulation by introducing new concepts in design which relieve the feeling of closeness so common in many bathrooms and dressing rooms.

This is achieved by creating an open area adjacent to one or more sides of the bath or bath-dressing room. For

instance, large sliding doors could open on to a secluded garden area. This may be a three foot wide corridor with dramatic pot plants set in gavel or an ample 'picture garden' with sun bathing or gymnasium facilities, securely screened by louvres, decorative blocks, or heavy foliage where necessary. Where privacy is no problem as perhaps, on a hillside or an upstairs bath, large picture windows or doors lead to balconies, oversized planter boxes, or take advantage of the view. The extended area may be roofless, or be partially or completely covered but air flows through the louvres, grills, open blocks or foliage surrounding it.

Although it is seldom mentioned in 'polite conversation', housewives in tropical areas will immediately appreciate the advantage of having towels and perspired clothes as well as the overnight lingerie laundry, dry out quickly before being delegated to the hamper or drawer, eliminating the danger of mildew.

Inside the bath dressing-room, compartment walls are kept to a minimal height providing privacy but permitting the newly created air currents to circulate freely adding immeasurably to the comfort of the area.

Time and necessity have evolved the basic bathroom fixtures to be the tub and/or shower, a lavatory, a bidet, a toilet and in rare cases a urinal.

Because of civilized man's reluctance to discuss bathroom activities in terms of personal needs, designers have been considerably inhibited. Manufacturers have, over the years, subtly directed us toward superior equipment in terms of function, comfort, beauty and ease of maintenance. Although the outer shape of the tub has remained basically rectangular or square, the inner molds of these heavily glazed porcelain tubs have undergone considerable refinement based on the contours of the human body. These are available in many colours in different styles. There is the standard upright type, or for those who prefer to step down into a bath 'Roman style', the sunken tub is also available in the pre-cast designs. Ample flat areas for resting bath accessories are provided, as well as skid proof surfaces for added safety. Mosaic tile is another medium currently being used to construct sunken tubs of any desired proportion such as the deep square or circular Japanese type baths, or shower stalls. Handy towel racks, safety poles and bars, soap holders, add convenience.

Toilets are available on pedestals which have molded easy to clean shapes or they can be wall hung, eliminating the pedestal. Over the years bowl and seat contours have been altered to provide greater comfort and cleanliness.





*Vanitory of laminated plastic with twin bowls.*

*Martin residence, Hyperion Rd., St. Andrew*

*Air circulates through unseen end of corridor type 'Garden'*



Silent flushes and odour controlling devices have been added.

Bidets are also available in the pedestal or wall hung models. There is also a chrome hose type bidet, complete with its own set of faucets which can be installed on the wall beside the toilet, bath tub, or shower stall.

Although the ample wall or pedestal 'wash bowl' still has its place, an increasing number of people are favouring the vanitory, which as its name implies, is a combination vanity and lavatory. Manufacturers are producing a variety of wash bowls which can be set flush into a counter of laminated plastic. This counter may be free standing or follow the length of a wall in the bathroom or dressing room. One or more wash bowls may be installed at any desired point. The accompanying cabinet work provides room for sitting at the counter as well as convenient storage space of desired depth and width. Mirrors and proper lighting to insure meticulous grooming complete this area.

In keeping with the new open plan, the point at which the bathroom ends and the dressing room begins is becoming less apparent with no loss of privacy. Free standing storage walls become utilitarian dividers, accessible from both sides. Hampers and linen cabinets which require good ventilation, as well as water heaters, can easily be built into such a wall.

*Photo courtesy of House Beautiful April 1966.*



The average daily temperature span encourages a wide variety of activity. Therefore adequate space must be provided for a rather more abundant supply of clothing in current use than in temperate or cold climates. Abroad, the change of seasons confines two thirds of the wardrobe to deep storage requiring space for only a third to be at hand.

The arrangement of the storage area can approximate the use of space in a modern department store. Although some standard measurements can be used as guides, depth of drawers, hanging areas, closed and open shelves should be adapted to the needs of the owner. Materials used in construction vary from aromatic cedar, hardwood, termite proofed lumber to perforated hardboard, laminated or clear plastics, louveres, basket weaves, and straw. Travel-minded people should not neglect the need for special storage requirements for woollens and furs as well as luggage.

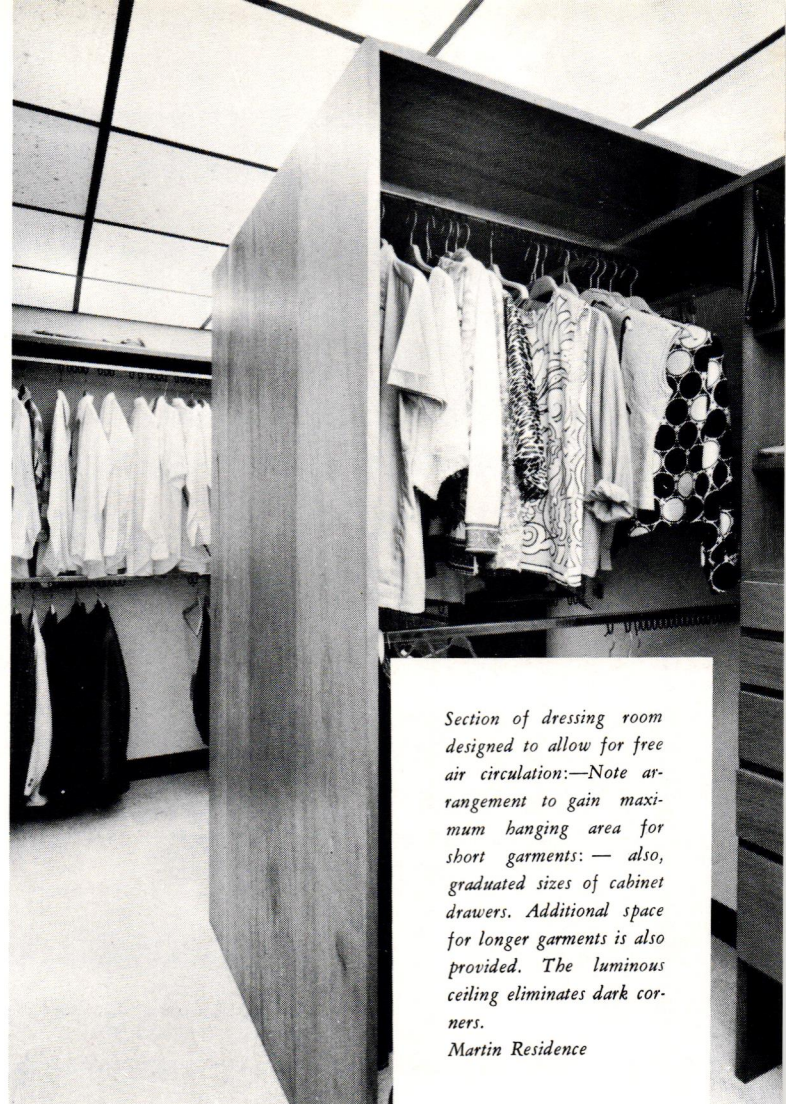
The increased ventilation and natural light provided in the new open plan type bath-dressing room automatically reduces the incidence of insect infestation, mildew, and stuffy odours. Area lights and luminous ceilings provide ample illumination at night.

Bathroom design has by no means reached its zenith however. At Cornell University a recent intensive study of the natural positions of the human body when performing bathroom functions cites the need for rather drastic changes in design. A look into the future promises toilets contoured to a low natural crouching position complete with arm rests. Lavatories are to be raised to a more amenable height, and the water from the faucet will flow up and over permitting a quick shampoo. Tubs and showers are to be enhanced with seats, handy control levers for water flow, hand sprays, better safety devices and shower heads which adjust to the desired height. The speed with which new designs are adapted will depend on the reaction of the public to this factual report on physical needs long neglected.

Until then however, there are some less revolutionary innovations which could be easily incorporated into our particular bathrooms. There is need for updating the law which prohibits light switches as well as outlets being installed inside of the bathroom. Today, when electric razors, hairdryers, toothbrushes, intercom systems, radios and telephones are so much a part of our lives, we have to contend with long extension cords or perform bathroom rituals in some other room. The extension cords themselves are as much of a hazard as the possibility of touching a plug with wet hands. In the average kitchen the same danger exists but there are no laws which restrict convenient switches and electrical outlets being installed. Why discriminate against the bathroom?

Although it may take about six feet more in a length of piping, the benefits of placing shower and tub faucets to the side rather than under the shower head or at the end of the tub are obvious, but seldom executed.

When one observes the difficulties that elderly people encounter when climbing in and out of a tub or shower or lowering themselves onto the toilet, the need for horizontal as well as vertical safety 'bars' or 'poles' becomes quite clear,



*Section of dressing room designed to allow for free air circulation:—Note arrangement to gain maximum hanging area for short garments: — also, graduated sizes of cabinet drawers. Additional space for longer garments is also provided. The luminous ceiling eliminates dark corners.*

*Martin Residence*

and should not be difficult to incorporate into the plan in an attractive way.

Strictly in the luxury class, but most appealing, are the miniature refrigerator units, such as one sees abroad, built into the vanity to keep beauty preparations cool and refreshing. Keen photographers will also recognize the advantages of storing extra rolls of film here as well.

Whether you have a new or old style bath or bath-dressing room much can be done to brighten it up. In addition to co-ordinating colours of curtains, towels, mats, painted surfaces, and accessories, with the permanent fixtures; fresh or dried flower arrangements, a magazine rack, a painting, large mirrors, or wallpaper panels add interest.

Careful thought may help you to reorganize your storage arrangements. Remember that shorter garments can usually be hung on an upper and lower rail, extending the area. Numerous closet organizers are on the market which condense and facilitate handling of awkward shaped accessories. Matched garment bags, shoe bags, handbag, and hat box sets are available which certainly give the closet a tidy appearance and keep things dust free.

Very often a simple bit of remodeling can completely lift your bath-dressing room out of the past and into the delightful free and open present concept, where you can retire from the nerve shattering pace of living, soak in a tub and contemplate a charming enclosed garden.



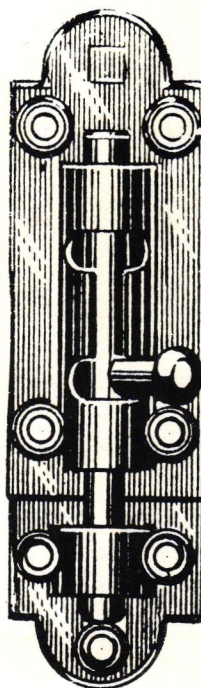
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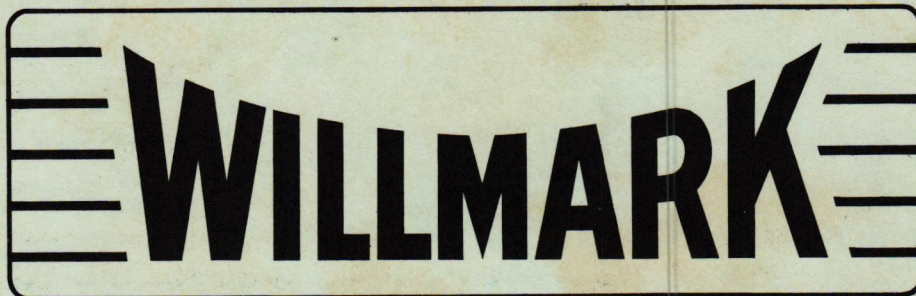


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