

No Downes

452

MANAGEMENT COMMITTEE.

CLERK OF THE COUNCIL'S DEPARTMENT.

COMMISSION OF ENQUIRY INTO THE
PRICES OF RESIDENTIAL SITES.

On the 9th February 1970 the Clerk of the Council reported that the Secretary to the Commission of Enquiry into the prices of residential sites had invited the Council to give evidence before the Commission. The Council had furthermore been invited to submit a memorandum covering the representations and information it might wish to convey to the Commission and the evidence to be given on its behalf.

The Council had been requested to deal in its memorandum with the following:-

- "1. (a) Please give an indication of the rise in the prices of undeveloped residential sites in your area over the past few years. Isolated sites in old established areas should please be dealt with separately from sites in new developments.
- (b) Do you consider these price rises as unrealistically high and do the present selling prices of such sites place them beyond the means of the average family man.
2. What do you consider local authorities could do to assist in maintaining the prices of undeveloped residential sites at a reasonable level and to prevent the sharp price increases (such as, e.g., itself acquiring land for development; the levying of a special rate in respect of undeveloped sites; the method of sale of sites, etc.).
3. What do you feel could be done at Provincial and Central Government level to assist towards maintaining the prices of such sites at a realistic level.
4. Which factors would influence the price you would be prepared to pay for vacant unplanned land required for township development and which formulas would you subsequently use in determining the inset selling prices of such sites.
5. Are there any restrictions in your area which compels a purchaser of a vacant site to build within a stipulated period, and do you feel that the existence of such restrictions would materially assist towards maintaining site prices at a realistic level.
6. (a) What would you suggest, in view of the population increase, the dearth of land, etc., as suitable sizes for residential sites for the various income groups.
- (b) Please state your views in detail on densities in general.

:- 7. (a) What

MANAGEMENT COMMITTEE.

CLERK OF THE COUNCIL'S DEPARTMENT.

7. (a) What standard of community facilities (school sites; open spaces, etc.,) and standard of services could a township developer according to your opinion, be reasonably expected to provide.
- (b) How do these standards compare with those at present applicable in your area."

A memorandum was prepared and presented to the Management Committee on the 9th February 1970. The Committee resolved:-

- "(a) That consideration of this matter be held over to enable the City Engineer, the Medical Officer of Health, the Clerk of the Council and the Heads of any other Departments concerned to prepare a revised memorandum for submission to the Commission of Enquiry into the Prices of Residential Sites on the lines of the discussion.
- (b) That the Secretary of the Commission of Enquiry be requested that the closing date for the submission of the memorandum referred to in paragraph (a) above be extended from the 20th February to the 20th March 1970.

... A revised draft memorandum is attached. The extended and final closing date for the submission of the memorandum is the 4th March 1970.

It is necessary for the Committee to decide (1) whether the attached memorandum should be submitted to the Commission of Enquiry and (2) what person or persons are to give evidence before the Commission.

FOR CONSIDERATION.

(285/17)
(c/c 111/70)

MEMORANDUM ON PRICES OF RESIDENTIAL SITES

Ad 1. (a) The attached schedule gives details of the increase in the prices of residential land in the various income categories. Percentage increases over the whole of the period 1961 - 1969 are high; lower percentages result where figures are given over a much shorter period, as in the case of Victory Park. The schedule has also been arranged in three categories showing respectively relatively undeveloped areas, developing areas and old established areas.

(b) The price rises are unrealistically high and in the majority of the cases present prices are beyond the means of the average family man.

Ad 2. Local authorities could assist in maintaining and stabilizing land prices by the acquisition of land for development purposes. The main problem in this connection is the availability of suitable land at reasonable prices, because the cream of the land has already been acquired by property developers at inflated prices. In addition, the technical problems of expropriation and the financing of development, present considerable difficulties for local authorities. However, it is imperative that an adequate supply of suitable stands be made available to the public. The economic law of supply and demand and the market mechanism will then adjust the price structure to a realistic and reasonable level. A special rate may not have the desired effect but may indeed discourage persons who buy land on lengthy terms.

Ad 3. Local authorities should be empowered to expropriate any land or any stand ~~and~~ in a township and be able to depend upon Government funds to finance the purchase. This property could then be resold to the public, but legislation should provide for a right of pre-emption in favour of the local authority, which should be able to borrow from State funds if improvements have to be bought out.

Ad 4. Johannesburg, more so than any of the other major cities in the Republic, is extremely sensitive pricewise to the geography of the land to be purchased and its protection from the cold southern winter winds.

Generally speaking, although conditions are fast changing due to the scarcity and distance of the land to the north of the Central Business District, land in this area sells for considerably more than that in the southern areas.

As with all commodities, the price of land is governed by the law of supply and demand. At present there is an unprecedented demand for land on the Witwatersrand. Large developers have acquired huge tracts around Johannesburg and local authorities, which are continuously afflicted by a shortage of capital for urgent major services, are particularly hard hit in obtaining capital for the prudent long terms purchase of land for housing purposes.

The price of land around Johannesburg, especially to the south, is almost in direct ratio to its distance from the city centre. Land suitable for the middle and lower middle income groups is confined almost entirely to this area, where the dolomite deposits following the line of the Klip River Valley present an ultimate boundary to urban development.

In fixing the price a local authority is prepared to pay for undeveloped land it is essential to have clearly conceived ideas on the income groups to be housed and the type of development it is proposed to carry out. The size of stands, permissible densities, zonings, conventional layouts of detached houses and a sprinkling of flat areas as opposed to "garden city" development, are major factors in establishing prices.

As a rough guide in the municipal schemes presently being constructed on a "garden city" basis, land costs represent only between 2 - 6% in the total cost of a scheme, as opposed to some 20 - 25% paid by the public for detached stands and the erection of a private dwelling. Annexure 4(a) reflects the capital costs of a typical "garden city" layout scheme.

As a point of interest, three conventional designed schemes sold on a home ownership basis show that land costs represent some 25 - 29% of the total cost of development prior to the sale of the stands. Annexures 4(b), (c) and (d) reflect details of these schemes.

Main link services to far flung and newly developed areas are a significant item in assessing the sale price of stands and could, if not carefully assessed at an early date, be a market burden on the Rate Fund. Similarly, the topography and micro-geology of the area can have a marked influence on development costs. Land with a high percentage of steep, rocky areas, deep valleys and adverse grades for sewers and stormwater carriers requires heavy capital outlay for development and this aspect must be carefully examined before any purchase is concluded.

In a Council sponsored home-ownership scheme, calculations for the upset price of the land are relatively simple. Only the total cost of the scheme needs to be covered by the selling price because there is no profit motive and, consequently, there are no allowances for profits and expansion.

Should legal, technical or administrative delays occur, prices will rise sharply because of the additional interest charges and the spiralling costs of development. Generally speaking, the final price is fixed to cover all relative costs as listed in typical examples of schemes carried out by the Council and shown in detail on Annexures 4(b), (c) and (d). The simplification and speeding-up of the machinery available to local authorities for expropriation of land would tend to reduce costs.

Ad 5.

Restrictions of this nature have been imposed in townships laid out by the Council, e.g. Roosevelt Park and Montgomery Park. From experience, one may state that when the supply of residential stands is equal to the demand, the sale of stands at cost price to the Council on the conditions imposed in Montgomery Park is an excellent means of enabling people in the lower and middle income group to acquire land and build their own homes.

However, when the supply of stands is far below the demand, as at present, restrictive conditions imposed regarding the re-sale price of a stand can be overcome by a buyer who buys from the original purchaser. All legal documents drawn reflect that the original purchaser is selling at the same price he paid for the stand but, in addition, an undisclosed amount over and above that price changes hands. This type of transaction is obviously very difficult to uncover.

The only way this could be overcome would be through a pre-emptive right prohibiting the original purchaser from selling to anyone other than the Council or developer and then at cost price only plus legal costs and rates and taxes. The Council or the developer should then be compelled to re-sell the repossessed stand at the new price paid plus reasonable administrative costs.

All the stands in Montgomery Park, Roosevelt Park and Extension were sold to limited income group earners by means of a public draw. The sale of these stands at cost price and subject to certain conditions, including one requiring the purchaser to pay for the stand within a prescribed time and then to commence building within 12 months of taking transfer, no doubt did assist in keeping prices at a realistic level. In fact, ⁺ 70% of the stands in these three townships were built on within 12 months of the sale of the township.

We are not aware of any similar restrictive conditions compelling a purchaser to build in a stipulated time in any privately developed townships in Johannesburg. A private developer wants to sell quickly and so will not impose onerous conditions on purchasers.

Ad 6. Sizes of Residential Sites and Densities.

Factors.

1. The rapid population increase has led to urban sprawl and has thrown an impossible task on local authorities to provide essential services.
2. It has also resulted in the private sector not being able to provide the required number of dwelling units. This applies not only in respect of the provisions of finance but also in the erection of units. Cheaper and more rapid forms of construction will become more essential in the future.
3. Densities higher than those presently provided must be aimed at without creating low-standard residential environments.
4. The primary desire of families is to achieve home ownership. Economic reasons will deny this to an ever-increasing proportion of the population.
5. The main desire of those who cannot achieve home-ownership is to rent accommodation either in houses, duplexes or low-rise flats, in this order of preference.
6. High-rise flat accommodation is sought by a small section of the population, usually:-
 - (a) single adults;
 - (b) young married couples with no school-going children;

- (c) Elderly couples whose children have completed or are just about to complete their school education;
- (d) Couples with school-going children who prefer this form of living.
7. The desires set out in 4 & 5 above were expressed when socio-economic studies were conducted of urban renewal areas in Johannesburg and applied to the lower income groups. The desires, city-wide, applicable to all income groups could be ascertained only through a very extensive research study, but the result is likely to be the same.
8. Social problems arise where families, through no fault of their own, are forced to live in accommodation or an environment which they detest.
9. A city must comprise all sections of a population and the type of housing they desire if it hopes to retain vitality and character. There must be no mad rush to increase densities in the established sectors of the city. Intensive study must be given to the city structure as a whole and any changes must be properly motivated, taking into account factors additional to a mere increase in density.
- It can be accepted, though, that development densities in new townships will have to be increased, taking into account at all times the need to create a reasonable residential environment and to avoid the creation of future slums.

Sizes of Residential Sites.

The factors to be taken into account are the income groups to be served and the type of dwelling unit to be provided.

For the purpose of assessing the existing housing situation in Johannesburg in income groups, a special study was undertaken in 1965. Income groups were based on the 1960 Census figures for incomes of the head of the family and the following classification was arrived at:

| <u>Income Group</u> | <u>Income Range</u> | <u>Percentage</u> |
|---------------------|---------------------|-------------------|
| High | R5500 + | 8 |
| Upper Middle | R2500 - R5499 | 25 |
| Lower Middle | R1200 - R2499 | 32 |
| Low (Sub economic) | R - R1199 | 35 |

Since 1960 it appears that incomes in the upper brackets have increased at an annual average rate of approximately 6% which means that personal incomes have virtually doubled. It will be noted that prices of residential stands have increased at a far greater

rate.

Sites for Detached Houses.

It must be stressed that it is not possible, nor would it be desirable to specify precisely the erf sizes for the various income groups on a national scale but the suggestions that follow are considered suitable for Johannesburg:

| <u>Income Group.</u> | <u>Assessed size of erf.</u> |
|----------------------|------------------------------|
| 1. | |
| High | 1500 to 3000 sq. metres |
| Upper Middle | 1000 to 2000 sq. metres |
| Lower Middle | 700 to 1200 sq. metres |
| Low | 320 to 700 sq. metres. |

Notes.

1. If an owner in this group wants a larger site, he can purchase two or three adjoining stands or, alternatively, look for a site outside an urban area.

Sites for Dwelling Units Other than Detached Houses.

The most common of these are the semi-detached, row house, duplex flats and multi-storey flats. The first two of these are more likely to be introduced in municipal housing schemes than in schemes promoted by private enterprise, although in Europe this is not necessarily the case.

For semi-detached houses a site 20 metres by 30 metres would be adequate to cater for a pair of semis.

For row houses the size of the site is determined by the number of units and the frontage of each unit.

For duplex flats the minimum size of the erf should be 2000 sq. metres housing six duplex flats.

Flat sites should be a minimum of 4000 sq. metres in order that on-site facilities can be provided to the residents. The number of units on each site of 4000 sq. metres will depend on the location of the site. This will be covered more fully in the next section.

Density of Development.

A study was initiated regarding the policy to be adopted by the City Council in respect of the area south of the City which was recently incorporated into the Johannesburg municipal area. It was accepted that the Council should increase densities in terms of present trends and in terms of economic factors.

The following is a brief summary of the approach:-

- (a) That installation of essential services in areas proposed for township development in the Klipriviersberg Range would be costly;

Many steep sites would not be developed with houses for decades, if ever; and would thus tie up capital funds uneconomically. The banks of the Klip River should be protected for the enjoyment of future generations.

- (b) A formula was devised whereby areas of steeply sloping land and the banks of the Klip River would be denied to development; development would be permitted in the balance of the area, termed the "Development Area".
- (c) To determine the number of dwelling units which could be obtained on the "Development Area" a development density of 1 dwelling unit per 800 sq. metres of gross area was determined. The number of dwelling units is determined by dividing the "Development Area" in sq. metres by 800 sq. metres.
- (d) The required number of dwelling units could be obtained by the provision of sites for detached houses, duplex flats and multi-storey flats, with provisos that sites for the first two forms of dwelling units should dominate.
- (e) In terms of people, this would provide a development density + 45 persons per hectare (+ 18 persons per ^{acre} ~~hectare~~), which is only 10% less than the density achieved in Parkhurst where stands are + 500 sq. metres.

The formula laid down that on a hectare of "General Residential" land, allowing flats, seventy flat units could be provided (+ 30 per acre).

This is a high site density and should be the maximum provided in outlying areas, except where a new business and commercial centre of some magnitude is created when the density adjoining such centre could be increased to between 90 and 100 flat units per acre. The area available for this higher density would be restricted.

Most town planning schemes have far too high a density for areas already zoned for General Residential purposes and some of these could become the slum areas of the future; consequently no increases are recommended in these areas.

It is considered that the density proposed for the southern areas, namely a development density of 1 dwelling unit per 800 sq. metres or, in terms of people, of 45 persons per hectare, is a reasonably high density to be applied to new development. It should be stated though, that where an organisation is prepared to layout a project and to construct dwelling units in terms of an overall approved master plan, higher densities could be considered.

Ad 7 (a)

- (i) On the 25th May 1958, the Johannesburg City Council adopted the following standards for assessing the minimal requirements of parks and recreational grounds in the Municipal area:-

"A total of 7 acres per 1,000 head of population was accepted as being the overall requirement for parks and recreation grounds within the municipal area. This figure does not include land required for metropolitan and provincial parks which provide facilities for picnicking, camping and similar activities. Private sports clubs, municipal and private golf clubs and waste ground designated as parks are also to be excluded from the standard of 7 acres per 1,000." (7 acres = 2.8 ha)

The minimum standards adopted for local amenities were as follows:-

| | | |
|----------------------------|---|-----------------------|
| (a) Children's playgrounds | : | 0.08 ha (0.2 acres) |
| | | per 1,000 population. |
| (b) Local parks | : | 0.56 ha (1.4 acres) |
| | | per 1,000 population. |
| (c) Local recreation | : | 0.36 ha (0.9 acres) |
| | | per 1,000 population. |
| Total | : | 1 ha (2.5 acres) |
| | | per 1,000 population. |

The following standards were adopted for suburbs of varying densities:-

- (i) Stand size 0.2 ha ($\frac{1}{2}$ acre) and more:-

| | | |
|---------------------|---|-----------------------|
| Local amenities | : | 0.4 ha (1.0 acres) |
| | | per 1,000 population. |
| Regional parks | : | 0.8 ha (2.0 acres) |
| | | per 1,000 population. |
| Regional recreation | : | 1 ha (2.5 acres) |
| | | per 1,000 population. |

- (ii) Stand size 0.1 ha ($\frac{1}{4}$ acre) - 0.2 ha ($\frac{1}{2}$ acre):-

| | | |
|-----------------|---|-----------------------|
| Local amenities | : | 0.8 ha (2.0 acres) |
| | | per 1,000 population. |
| Regional parks | : | 0.8 ha (2.0 acres) |
| | | per 1,000 population. |

The current view is that in "General Residential" areas the standard of 1.0 acre per 1,000 head of population for local amenities is on the low side and that this could well be increased to a figure of 2.5 acres per 1,000 head of population.

The following clause is contained in the Johannesburg Town Planning Scheme, as amended:

The owner of any new township within the area shall provide as public open space the following minimum proportion of the township area:-

| <u>Density Zoning</u> | <u>Percentage of Area</u> |
|--|---------------------------|
| 5,000 sq. ft. per dwelling house | 12% |
| Up to 6,000 sq. ft. per dwelling house | 10% |
| Up to 7,000 sq. ft. per dwelling house | 7½% |
| Up to 10,000 sq. ft. per dwelling house | 5% |
| Up to 15,000 sq. ft. per dwelling house | 3% |
| Up to 20,000 sq. ft. and over per dwelling house | 1½% |

(1,000 sq. ft. = 99.136 m²)

Provided that:-

- (i) Where land which it is proposed to set aside as open space in a new township be not entirely satisfactory for such purposes, the area be increased to an extent at the discretion of the Administrator.
- (ii) The Administrator may require the owner to make a payment in lieu of land.
- (iii) With the consent of the Administrator, the percentage to be provided either in land or in money may be reduced.

The standards suggested for the provision of school sites, contained in an interim report entitled "Johannesburg Educational Facilities" (1967) prepared in the Johannesburg City Engineer's Department, are as follows:-

| | | |
|--------------------|---|--|
| Nursery schools | : | 495.678 - 991.356 m ² (5,000 - 10,000 sq. ft.) |
| Primary schools | : | 3.4 ha (4 morgen) with an enrolment of 450 - 750 pupils, |
| Secondary schools: | : | 8.5 ha (10 morgen) with an enrolment of 750 - 1,200 pupils |

The object of township owners, which is to obtain a maximum return from their investment, often leads to the introduction into their development plans of certain types of land use or zoning which are entirely unwarranted or excessive from a town-planning point of view. This is naturally where conflict arises between town planners and developers. Provisional layout plans for townships often include very large shopping or business stands when, possibly, such a centre exists in an adjacent township or when a small business stand to accommodate two or three local shops for "convenience" shopping would suffice.

Regional shopping centres should be planned on the basis of serving a reservoir of 3.2 - 4.8 km (2 - 3 miles) radius and should therefore be planned on a regional basis, cognisance being taken of such facilities in adjacent areas.

The introduction of "general residential" stands into what is often a low density type of development, is another means by which the developer schemes to increase the return on his investment without due consideration being given to the consequences. This creates difficult problems both for the town planner and the highway engineer.

High-density pockets generate high volumes of traffic and the haphazard location of such pockets in a regional area renders the planning of a satisfactory highway plan most difficult and, in extreme cases, impossible.

It is therefore imperative, if good town planning and the requisite optimum township conditions are to be achieved, that the first requirement is a development plan for the region. The need for amenities such as shopping centres, regional parks, primary and high school sites, can then be properly assessed and so located as to be of maximum benefit, and high-density development planned to fit in with a well-designed major traffic plan.

(ii) Standards of Services

General.

With the effluxion of time the Council has developed and modified standards for the major services which seem, on review, to be reasonable and appropriate for the mode of life in the Republic and for physical

conditions in the Transvaal highveld. These are as follows:-

Water Supply

See Annexure 7 (a).

Sewer Reticulations

See Annexure 7 (b).

Stormwater. *See Annexure 7(c).*

Over the past 80 years records have been kept of the rainfall in the Municipal area and a set of design standards has been developed which appears to be reasonable. The occasional floodings have been within the forecast limits. Research by means of automatic intensity rain-gauges sited throughout the city is still continuing and it is hoped that when staff is available modified criteria will be adopted. Annexure 7 (c) reflects the required design criteria for intensity of rainfall and run off and construction and land requirements for the necessary reticulation.

Road Construction.

Design criteria for roads in new townships, particularly in the hilly parts of the recently incorporated southern areas are being re-assessed. Present requirements for the easier topographical conditions in the northern areas are:-

| | |
|--|-----------------------------|
| Carriageway | = 9.14 m (30' - 0" English) |
| Road Reserve | = 15.74 m (50' - 0" Cape) |
| Axle Load | = 4082.33 kg (9000 lbs.) |
| Minimum consolidated thickness of road metal | = 114.3 mm (4½") |
| Vertical kerbs (standard Design) | = 76.2 mm (3") |

Possibilities for the southern areas, where there are steep grades and rocky outcrops, are

| | |
|-------------------------|--------------------------------------|
| Carriageway | = 6.7 m (22' - 0" English) |
| Road Reserve | = 15.74 m (50' - 0" Cape) |
| Axle Load | = 3175.15 kg (7000 lbs.) |
| Thickness of road metal | = 76.2 mm (3") (consolidated) |
| Kerbs | = Sloping Kerbs - 101.6 mm (4") rise |

Heavy traffic carriers or through roads would have 9.14 m (30' - 0" English) carriageways and 114.3 mm (4½") thickness of consolidated road metal.

Naturally, the higher the standard of design, the greater its capital outlay.

PURCHASE OF LAND FOR HOUSING SCHEMES.

In 1967 a Study team was sent overseas to investigate housing in most of the countries in Europe and America.

One of the most striking features it noted was the universal drive for improved housing standards, with all its attendant sociological benefits. Paramount amongst the targets set was the need to assemble large tracts of land at reasonable prices for comparatively large housing schemes. State financial aid at very low rates of interest is provided to enable local authorities and co-operative housing societies to develop home ownership schemes and this aspect must be actively pursued to bring comparatively cheap land onto the South African market.

Home ownership is one of the pillars of a sound and healthy society and the State should give further assistance through the following devices, which are used overseas:-

(a) Tax Aid.

This provides for a tax rebate over a period of ten years for the cost of the house and land. Make this aid available, as in Germany, for individuals and also for co-operative housing societies if they come into being in the Republic.

(b) Low Rates of Interest.

In addition to the cheap rate of interest (1%), which the German Government charges on housing loans, plus $\frac{1}{2}\%$ annually for administrative cost and $1\frac{1}{2}\%$ on an annuity basis, there is rent aid, controlled through a means test, for persons who cannot afford the rent over the first five years.

(c) Income Tax Reductions.

All costs for maintenance of and repairs to houses purchased under State aid schemes should be deductible for Income Tax purposes.

(d) "Split" Housing Loans.

A system should be introduced whereby loans are "split" i.e. Building Society-financed loans for one half the cost redeemable over 20 years and the balance provided by the State at 2% interest, redeemable over 40 years.

(e) Transfer Fees and Stamp Duties.

Young married couples building a house for the first time should not be called upon to pay transfer fees or stamp duties.

RESIDENTIAL LAND PRICE INCREASE SCHEDULE.

| Income Group Number | Township | Extent of Land | DATE OF SALE | | | | | | | | TOTAL PERCENTAGE INCREASE. | |
|---|------------------|----------------|--------------|------|------|------|------|------|-------|-------|----------------------------|--------------------------|
| | | | 1961 | 1962 | 1963 | 1964 | 1965 | 1966 | 1967 | 1968 | | 1969 |
| <u>(1) Relatively undeveloped areas</u> | | | | | | | | | | | | |
| 2 | Fairland | + 30000 sq.ft. | 474 | 1000 | 1000 | 2100 | 2100 | 3000 | 7000 | 7800 | 8600 | 1712% |
| 2 | Northcliff Ext.4 | + 20000 sq.ft. | 2100 | 2400 | 2800 | 3250 | - | - | - | - | 7750 | 268% |
| 2 | Valeriedene | + 20000 sq.ft. | - | - | - | 2500 | - | - | - | - | 7360 | 194% (for 6 year period) |
| 2 | Kew | + 15000 sq.ft. | 1100 | - | - | - | - | - | - | - | 8000 | 627% |
| 2 | Glenhazel | + 15000 sq.ft. | 2500 | - | - | - | - | - | 10000 | - | - | 300% (for 7 year period) |
| 2 | Lombardy East | + 20000 sq.ft. | 1200 | - | - | - | - | - | - | - | 6050 | 404% |
| 2 | Lyndhurst | + 20000 sq.ft. | 1300 | - | - | - | - | - | - | - | 7250 | 457% |
| 3 | Tulisa Park | + 23000 sq.ft. | 1100 | - | - | - | - | - | - | - | 3800 | 245% |
| 3 | Tulisa Park | + 10000 sq.ft. | - | - | - | - | - | - | 1050 | - | 3800 | 185% (for 3 year period) |
| <u>(2) Developing Areas</u> | | | | | | | | | | | | |
| 2 | Berario | + 14000 sq.ft. | - | - | - | - | - | - | 4000 | - | 7000 | 75% (for 3 year period) |
| 2 | Blairgowrie | + 10000 sq.ft. | 1700 | - | - | - | - | - | - | 5250 | - | 208% (for 8 year period) |
| 3 | Gillview | + 8000 sq.ft. | 1500 | - | - | 1650 | - | - | - | - | 4150 | 176% |
| 3 | Evans Park | + 8300 sq.ft. | - | - | - | 1100 | - | - | - | - | 3500 | 218% (for 6 year period) |
| 3 | Robertsham | + 8300 sq.ft. | 1200 | - | - | 1450 | - | - | - | - | 5100 | 325% |
| 3 | Ridgeway | + 7500 sq.ft. | 1200 | - | - | - | - | - | - | - | 4200 | 250% |
| 4 | Chrisville | + 7700 sq.ft. | 1500 | - | - | - | - | - | - | - | 3000 | 100% |
| 4 | Easttown | + 10000 sq.ft. | 700 | - | - | - | - | - | - | - | 5600 | |
| <u>(3) Old Established Areas</u> | | | | | | | | | | | | |
| 1 | Saxonwold | + 40000 sq.ft. | 8250 | - | - | - | - | - | - | 22500 | - | 172% (for 8 year period) |
| 2 | Gardens | + 10000 sq.ft. | 1700 | - | - | - | - | 5100 | - | 7000 | - | 311% (for 8 year period) |
| 2 | Victory Park | + 19000 sq.ft. | - | - | - | - | 5500 | - | 8000 | 9500 | - | 72% (for 4 year period) |

Referred to in I (a) of the Memorandum.

ANNEXURE 1

SCHEDULE 4 (a)Referred to in 4 of the
Memorandum.PROPOSED ECONOMIC EUROPEAN HOUSING SCHEME

(GARDEN LAYOUT)

ESTIMATED CAPITAL COST

| | | |
|----------------------|-------------------|----------|
| 1. | Land | R51,575 |
| 2. | Building Costs | R765,934 |
| 3. | Domestic Services | R27,680 |
| 4. | Development Costs | R70,750 |
| 5. | Overhead Charges | R69,779 |
| TOTAL COST OF SCHEME | | R985,718 |

TOTAL DWELLING UNITS : 173

SCHEDULE 4 (b)ROOSEVELT PARK EXTENSION NO. 1.

| | R |
|---|-----------------|
| Land - 165.8469 acres @ - R585 acre | 97,020 |
| Interest on capital and admin. charges | 14,000 |
| Survey | 4,000 |
| Forming and grading roads | 7,120 |
| Canalisation of main stormwater drain | 26,200 |
| Road construction and incidental stormwater | 57,080 |
| Demolition of old homestead | 2,000 |
| Water reticulation | 28,000 |
| Sewerage reticulation | 49,000 |
| Electricity reticulation | 49,848 |
| Unforeseen expenditure | 4,000 |
| | <hr/> |
| | R338,268 |
| | <hr/> |
| Total Costs [†] - R2040 per acre | |
| Total Amount Sold For | <u>R287,659</u> |

SCHEDULE 4 (c)MONTGOMERY PARK

| | | |
|--|----------------------------------|-----------------|
| Land Purchase 24/11/43 | 200.765 acres at + R585 per acre | R117,448 |
| Interest on capital to 30/6/67 | | R39,668 |
| Assessment rates to 30/6/67 | | R42,562 |
| Administration charges (nominal estimate) | | R4,000 |
| Preliminary forming and grading of roads | | R7,710 |
| Construction of roads and stormwater control | | R69,400 |
| Demarcation of stands with whitewashed stones and number plates | | R1,200 |
| Water Reticulation | | R43,000 |
| Sewerage reticulation | | R71,000 |
| Electrical reticulation | | R74,000 |
| | | <u>R469,988</u> |
| Total Cost : + | R2,340 per acre | |
| <u>Total amount for stands sold</u> | | <u>R404,155</u> |

SCHEDULE 4 (d)DE WETSHOF

| | | |
|---------------------------------------|------------------------------|-----------------|
| Cost of Land | 83.493 acres + R890 per acre | R74,178 |
| Interest on Capital | | R8,906 |
| Assessment rates | | R35,024 |
| Refuse service | | R404 |
| Sewer reticulation | | R15,427 |
| Water reticulation | | R24,100 |
| Road Construction | | R108,980 |
| Electrical reticulation | | R5,260 |
| Roads culverts and other sewer drains | | R14,780 |
| Fencing sewerage drain | | R1,280 |
| Administration and advertising costs | | R5,000 |
| Cleaning of site | | R1,150 |
| Survey and establishment charges | | R6,500 |
| Demarcation of stand pegs | | R500 |
| | | <u>R301,489</u> |

Sold by public auction

183 Stands sold for:-

R762,563

ANNEXURE 7(a)
(Referred to in 7(a)
of the memorandum)

JOHANNESBURG MUNICIPAL STANDARDS FOR WATER SUPPLY &
RETICULATION - PRIVATE TOWNSHIPS.

1. GENERAL POLICY

Water supply to reticulation of all townships is undertaken by J.C.C. except where the Council cannot cope with the amount of work involved in which case the Township Owner must install the reticulation.

Bulk water supply is normally provided by the J.C.C. at Township boundary. No contribution towards the supply main and storage is required.

Should Township Owner not be satisfied with the date on which the Council can provide the water supply at the boundary, he may, subject to the approval of the Council, install the supply main at his own cost.

2. DESIGN STANDARDS

Peak flow rates shall be calculated on the following basis:-

| <u>Size of erf</u> | <u>Flow</u> |
|-------------------------------------|-----------------------|
| $\frac{1}{2}$ to $\frac{1}{4}$ acre | $1\frac{1}{2}$ g.p.m. |
| $\frac{1}{4}$ acre | $1\frac{1}{4}$ g.p.m. |
| $< \frac{1}{4}$ acre | 1 g.p.m. |

Flats: 75% - 80% of houses.

Requirements for fire protection according to S.A.B.S.090-1966.

Storage capacity required shall be calculated according to R.W.B. standards i.e. 36 hour based on peak monthly demand. Capacity of elevated tanks to be $2\frac{1}{2}$ to 4 hours peak demand (height = base to low level = 90 ft.)

The pressure limits in reticulation systems shall be as follows:-

| | | |
|---------------------------------|---|---|
| Minimum | = | 80 - 90 ft. head. |
| (under peak flow conditions) | | (slightly lower will be considered in exceptional cases). |
| Maximum | = | aim at 300 ft. head. Maximum 150 p.s.i. (400 ft. may be permissible if necessary). |

ANNEXURE 7 (b)

(Referred to in 7(b) of
Memo)SUMMARY OF SEWER STANDARDS1. QUANTITY OF FLOW:

For European special residential townships the following design flows should be used:-

For Stands up to

- $\frac{1}{5}$ acre in area - daily flow 200 g.p.d.; peak flow 0.06 cumins
- $\frac{1}{4}$ acre in area - daily flow 220 g.p.d.; peak flow 0.07 cumins
- $\frac{1}{3}$ acre in area - daily flow 240 g.p.d.; peak flow 0.08 cumins
- over $\frac{1}{3}$ acre in area - daily flow 260 g.p.d.; peak flow 0.09 cumins

Above figures make allowance for stormwater ingress, infiltration, etc. Sewers to be designed for max. discharge at peak wet weather flows at a depth of 0.62 of pipe diameter.

For flows from general residential and industrial stands, see new Departmental Code of Practice and Design Standards.

2. VELOCITIES:

Normal min. velocity - 3 ft./sec.

An absolute min. velocity of 2.5 ft./sec. may be permitted under extraordinary circumstances.

3. SIZES AND GRADES:

6" Smallest sewer used. Min. grades 6" 1:100, 8" 1:150, 10" : 1:210
Hostel sites in native areas 6" 1:120
Up to 18" S.G.W. pipes. Above 18" - dolomitic concrete pipes.
Standard sizes 6", 8", 10", 12", 15", 18", etc. (x 3")

4. HOUSE CONNECTIONS:

Min. grades 4" 1:60, 6" 1:90

Min. depth to invert of connections in streets is 4' - 0" below sidewalk level at stand boundary on the low side and 4' - 9" below sidewalk level at stand boundary on the high side.

Min. depth to invert of connections in servitudes is 2' - 6".

5. DEPTH OF STAND TO BE SERVED:

The following schedule must be used solely as a proportional guide and only where slope of land is not steeper than 1 in 20.

In residential townships (max. depth of sewer = 10 ft.)

- (a) For stand depth up to 110' - 0" - full depth to be served.
(b) For stand depth up to 130' - 0" - 0.93 depth to be served.
(c) For stand depth up to 150' - 0" - 0.86 depth to be served.
(d) For stand depth up to 180' - 0" - 0.80 depth to be served.
(e) For stand depth up to 210' - 0" - 0.75 depth to be served.

With mid-block sewers the depths in (a) and (b) can be reduced by 15' - 0"

ANNEXURE 7(c)
(Referred to in 7(a)
of the memorandum)

STORMWATER DESIGN STANDARDS

RUNOFF

The runoff from any particular section of a township is dependant on a number of factors and is covered by design criteria established in the City Engineer's Department. These are of almost universal acceptance and do not vary appreciably from place to place.

INTENSITY OF RAINFALL

The time of concentration for the particular element of the drainage system of a township is determined by intensity-duration design charts and are available if required.

RECURRENCE INTERVAL

Residential Areas:

Minor Drains : 5 years
Main Drains : 25 years.

High Density Business Districts:

Interval : 100 years.

NOTE:-

An assessment should be made of the damage likely to be caused by the failure of a given drainage system. If the damage is out of proportion to the additional costs involved in adopting the next high recurrence interval, then this should be done.

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PUBLISHER:

Publisher: Historical Papers Research Archive, University of the Witwatersrand, Johannesburg, South Africa

Location: Johannesburg

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