

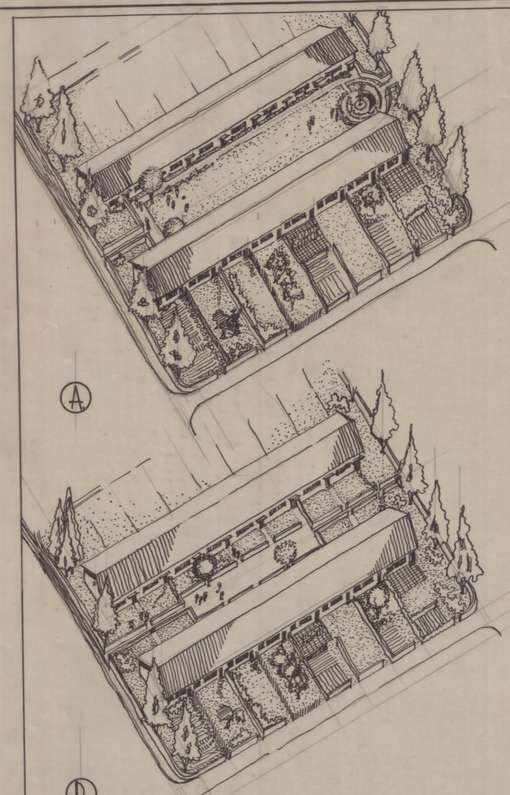
https://dspace.org/

SA Council for Scientific and Industrial Research Pretoria. 1. Report on Witbank New Native Township (Architect: Calderwood, D.M.): 1.1 Location, site & zoning BR/V/506: 634X350 1.2 Development control analysis (graphs) BR/V/508: 655X685. 1.3 Space anaysis. BR/V /507: 655X685 1.4 . Space & Services analysis.BR/V/ 510: 655X685

S.A. Council for Scientific and Industrial Research, Pretoria. National Building Research Institute.Architect: Calderwood, D M.

2012-01-19
http://hdl.handle.net/10539/11112

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LAYOUT 'A' SHOWS ROW HOUSES FACING OPEN SPACE MAINTAINED BY HOUSING AUTHORITY. THE SPACE IS LARGE & USEFUL BUT CAN BE NOISY. LAYOUT 'B' SHOWS REDUCED OPEN SPACE ALLOWING FRONT GARDENS OF HOUSES TO DEVELOP. NOISE IS REDUCED BUT UNLESS GARDENS ARE MAINTAINED CAN BE UNSIGHTLY.
NOTE SERVICE ROAD AT REAR OF HOUSES IN BOTH SCHEMES.

• ROW HOUSES REAR ACCESS. •

• PLATE NUMBER BRA/K/



CASE. 1. DETACHED HOUSES.
PLOTS. 50' x 32'
APPROX. 21 FAMILIES/ACRE.

CASE. 2. SEMI-DETACHED.
PLOTS. 40' x 40'
APPROX. 21 FAMILIES/ACRE.

CASE. 3. SINGLE STOREY ROWS.
PLOTS 25' x 64'
APPROX 24 FAMILIES/ACRE.

CASE. 4. DOUBLE STOREY ROWS.
PLOTS 15' x 106'-4"
APPROX 25 FAMILIES/ACRE.

CASE. 5. THREE STOREY FLATS.
1 ACRE PLOT.
APPROX 48 FAMILIES/ACRE.

SYSTEM.

ALLOWANCE FOR INDOOR LIVING SPACE @ 150 SQ.FT/PERSON & OUTDOOR SPACE @ 250 SQ.FT/PERSON GAVE A HOUSE OF 600 SQ.FT. & OPEN OUTDOOR OF 1000 SQ.FT FOR A FAMILY OF 4 PERSONS. THIS GAVE A SITE OF 1600 SQ.FT. CONTAINING A HOUSE OF 600 SQ.FT. FOR SINGLE STOREY DETACHED UNITS. THE HOUSE WAS DRAWN WITH OVERALL DIMENSIONS OF 25'x 24'.

OBSERVATIONS.

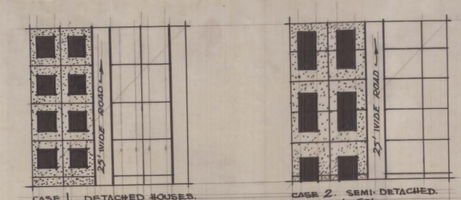
CASE 1. DETACHED, FRONT SPACE OF 25' & SIDE SPACE OF 16' IS CRAMPED; A PLOT WITH 50' FRONTAGE WAS NECESSARY FOR PRIVACY BUT WHEN ONLY 32' DEEP IT BECOMES UNECONOMICAL FOR ROADS & SERVICES.
CASE 2. SEMI-DETACHED, REAR SPACE 12' & SIDE SPACE OF 30' AGAIN TOO CRAMPED; SITE 40' x 40' AS FOR CASE 1.
CASE 3. SINGLE STOREY ROW HOUSES, FRONT SPACE 52' IS APPROACHING IDEAL CASE; PLOT 25' x 64' GIVES A REASONABLE GARDEN SPACE.
CASE 4. DOUBLE STOREY ROW HOUSES, FRONT SPACE 94' IS O.K. SITE 106'-4" x 15' IS INCLINED TO BE NARROW.
CASE 5. THREE STOREY APARTMENTS ON 1 ACRE PLOT, SYSTEM IDEAL GIVING 48 FAMILY UNITS WITH BIG OPEN SPACE.

CASE No.	1.	2.	3.	4.	5.
PERCENTAGE OF SITE COVERED.	37.5%	37.5%	37.5%	22.5%	25%

SCALE 1 INCH = 100 FT. EACH SQUARE EQUALS 1 ACRE.

• DEVELOPMENT CONTROL BY SPACE REQUIREMENTS. •

• PLATE NUMBER BRA/K/

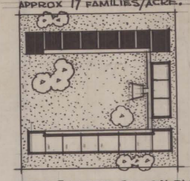


CASE 1. DETACHED HOUSES.
PLOT. 50' x 40'
APPROX 17 FAMILIES/ACRE.

CASE 2. SEMI-DETACHED.
PLOT. 40' x 50'
APPROX 17 FAMILIES/ACRE.

CASE 3. SINGLE STOREY ROW
PLOTS 25' x 80'
APPROX 17 FAMILIES/ACRE.

CASE 4. DOUBLE STOREY ROW.
PLOTS. 18' x 153' OR 15' x 85' MIN.
APPROX 30 FAMILIES/ACRE MAX.



CASE 5. THREE STOREY FLATS.
1 ACRE PLOT
APPROX 57 FAMILIES/ACRE.

SYSTEM.

NO BUILDING OR BUILDINGS MAY COVER MORE THAN 30% OF THE AREA OF PLOT. BUILDING MEANS DWELLINGS & OUTBUILDINGS (GARAGE, SERVANTS QUARTERS ETC.) AGAIN IT HAS BEEN TAKEN ON THE BASIS OF HOUSE ONLY AT 600 SQ.FT. FOR A FAMILY OF 4 PERSONS.

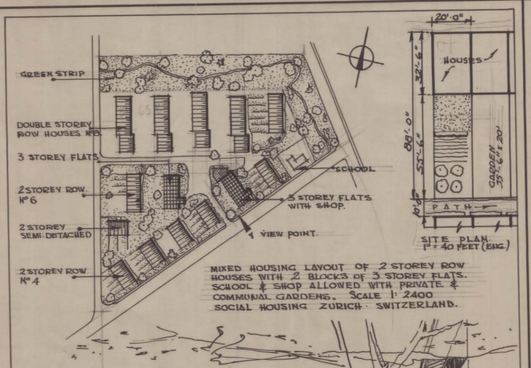
OBSERVATIONS.

CASE 1. DETACHED, FRONT SPACE: STREET WIDTH + 20', REAR 12' & SIDE SPACE OF 25' IS CRAMPED IN SITE DEPTH. WITH 50' FRONTAGE & DEPTH OF 40' SITES ARE UNECONOMICAL FOR DEVELOPMENT.
CASE 2. SEMI-DETACHED FRONT = WIDTH OF ROAD + 20', REAR 32' & SIDE 30' IS ONLY CRAMPED AT REAR OF HOUSES.
CASE 3. SINGLE STOREY ROW HOUSES GOOD RESULTS OBTAINED.
CASE 4. DOUBLE STOREY ROW HOUSES WITH MAX. COVERAGE GIVING 15' x 83' PLOT, GARDEN OF 58' x 15' RATHER NARROW AND SMALL.
CASE 5 THREE STOREY APARTMENTS AT 30% COVERAGE LOOK O.K. IF BLOCKS WELL DESIGNED.

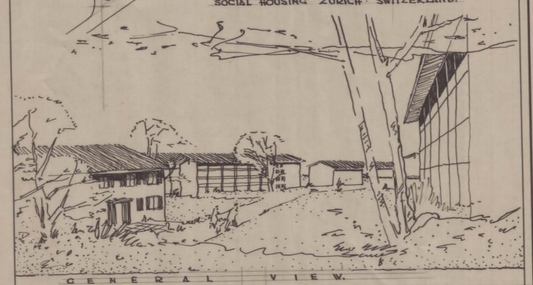
SCALE: 1 INCH = 100 FT. EACH SQUARE EQUALS 1 ACRE.

• DEVELOPMENT CONTROL BY COVERAGE •

• PLATE NUMBER BRA/K/



MIXED HOUSING LAYOUT OF 2 STOREY ROW HOUSES WITH 2 BLOCKS OF 3 STOREY FLATS. SCHOOL & SHOP ALLOWED WITH PRIVATE & COMMUNAL GARDENS. SCALE 1: 2400
SOCIAL HOUSING ZURICH - SWITZERLAND.



GENERAL

DENSITY 12 dwellings/acre
WITH ½ ROAD AREA.
PERCENTAGE ROAD 13 %
SITE COVERAGE 16% GROSS.
SPACE BETWEEN HOUSES
65' FRONT & 60' TO 38' SIDE.

VIEW.

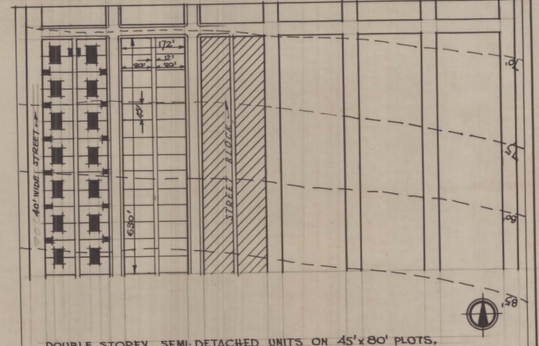
COST PER UNIT FOR:
WATER £
SEWERAGE
LIGHT
STREETS
TREES
ST. LIGHT.

TOTAL £

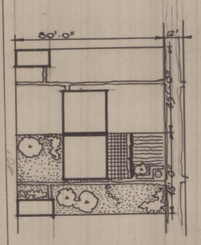
NETT DENSITY 12 DWELLINGS/ACRE.
SITE SERVICE COSTS £ / UNIT.

REFUSE REMOVAL AT REAR ON PATHWAY.
SEWERAGE WATERBOURNE.
ORIENTATION, TO NORTH EAST MAINLY.
AESTHETICS, WELL COMPOSED LAYOUT.

• PLATE NUMBER BRA/K/



DOUBLE STOREY SEMI-DETACHED UNITS ON 45' x 80' PLOTS.
EXAMPLE TAKEN FROM U.S.A.
SCALE: 1" 2400.



SITE PLAN
1" = 40 FEET (ENG.)

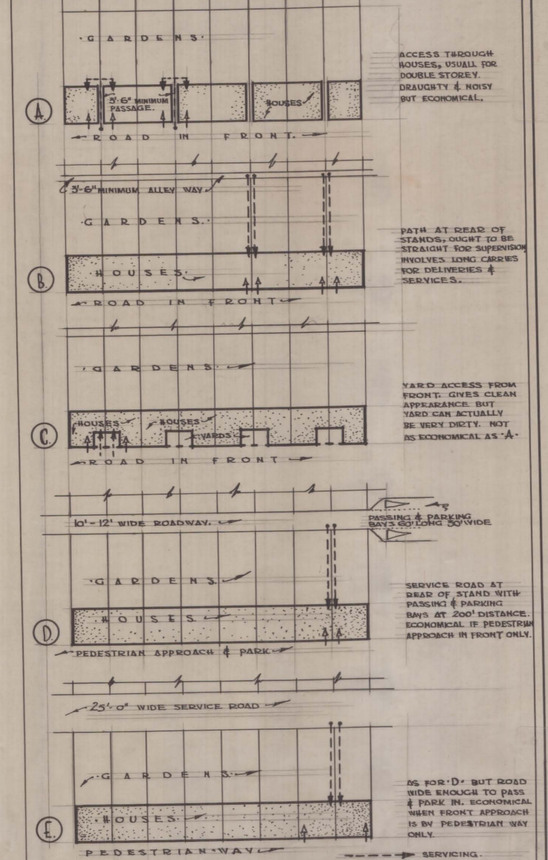
DENSITY: 8.86 dwellings/acre WITH ½ ROADS.
PERCENTAGE ROADS & ALLEY 29.8%
SITE COVERAGE 16%
SPACE BETWEEN HOUSES: 42' FRONT & 92' & 72' ON THE SIDES.
COST PER UNIT WATER £
SEWERAGE
LIGHT.
STREETS.
TREES.
ST. LIGHT.

TOTAL. £

NETT DENSITY: 8.86 DWELLINGS/ACRE.
SITE SERVICE COSTS: £ / UNIT.

REFUSE REMOVAT AT SIDE OF SITE.
SEWERAGE WATERBOURNE.
ORIENTATION NORTH & SOUTH FACING.
AESTHETICS, CONTROLLED BUT MONOTONOUS.

• PLATE NUMBER BRA/K/



• SERVICE ACCESS TO ROW HOUSES. •

• PLATE NUMBER BRA/K/

BRA/V/510.

BRV 510

DEVELOPMENT CONTROL BY SPACE REQUIREMENTS
PRETORIA
BRA/V/510
D.M. CALDERWOOD
645 x 685mm