UNIVERSITY OF STRATHCLYDE

POST WORLD-WAR-II HOUSING DESIGN AND DEVELOPMENT IN GREAT BRITAIN

A Thesis submitted in the Department of Architecture and Building Science for the Degree of Master of Science

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PART TWO

PRIVATE SECTOR HOUSING - GREAT BRITAIN

CHAPTER 7: The Background

Section 7.1.1: From the Industrial Revolution to W-War-II

With the industrial revolution in its stride in mid-nineteenth century, the mass produced 'back-to-back' terrace houses were slightly improved by the bye-law standards of the 1870.

But "... the workers' terraces were not to be the prototype for the future speculative house - it was to be the new managerial and executive villa. Voysey's 1888 house in Bedford Park..... kept on appealing to generations for the next eighty years.".[1] A development of Voysey's house was the Port-Sunlight houses near Birkenhead, started in 1890's by the philanthropist manufacturer Lever, see Fig. (7.1), overleaf.

Before the war of 1914-1918, private enterprise was the sole provider of houses. Though local authorities were empowered to provide working class dwellings as long ago as 1851, not much use of their powers was made by them before 1919.

"The shortage of accommodation following the Great War, fuelled by Government subsidies and aided by public transport, encouraged the 'ribbon development' phenomenon... While this mass popular movement was taking place, others basically dissatisfied with it were looking .... for something different. And so the garden city became the vogue."[2]

First came Letchworth in 1904 to be largely completed by 1922 when Welwyn Gardens started.

By 1920's, when Louis-de-Soissons was designing Welwyn, nearly all those Victorian concepts of bathing in the living room, wash-boilers and coppers in the scullery and so on had changed, as can be seen through the houses' plans, see Fig. (7.2), overleaf.

Fig. 7.1 TERRACED NON-PARLOUR COTTAGE AT PORT SUNLIGHT 1890

ground floor plan 1:100 first floor plan

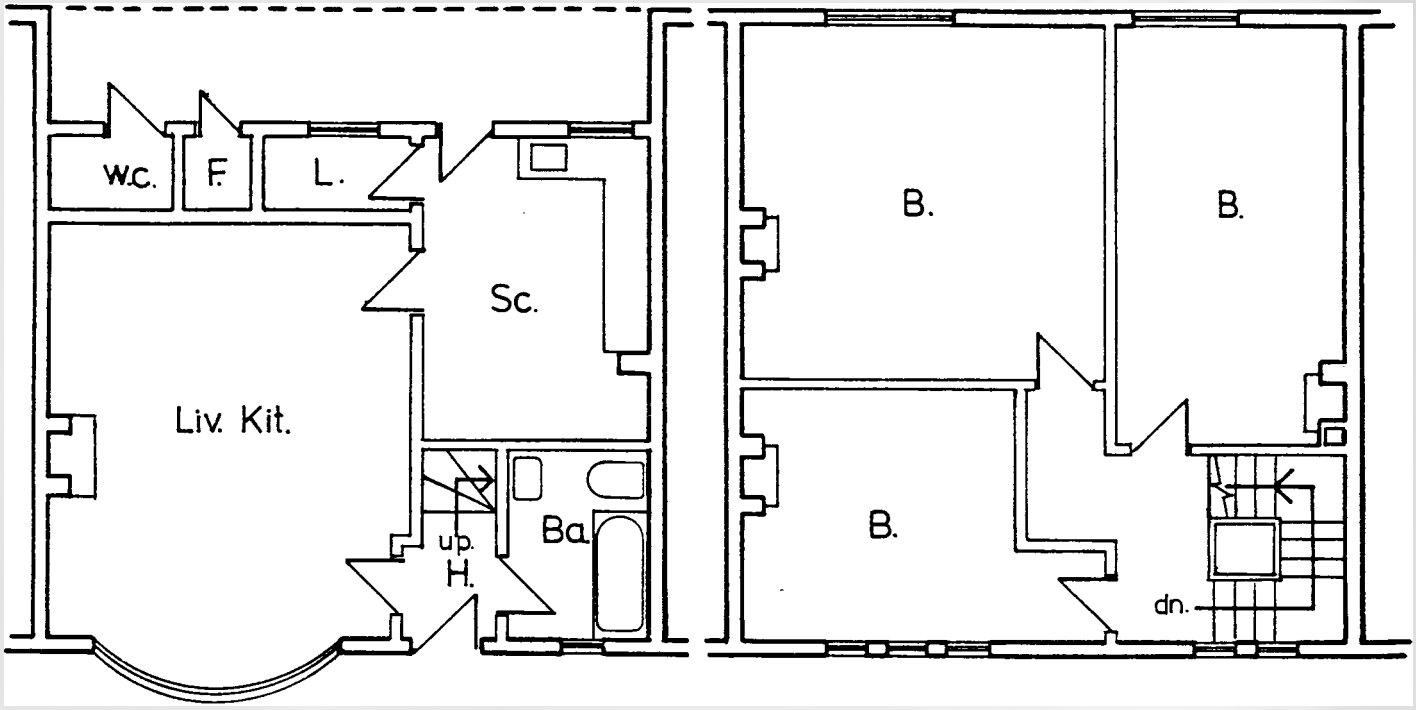
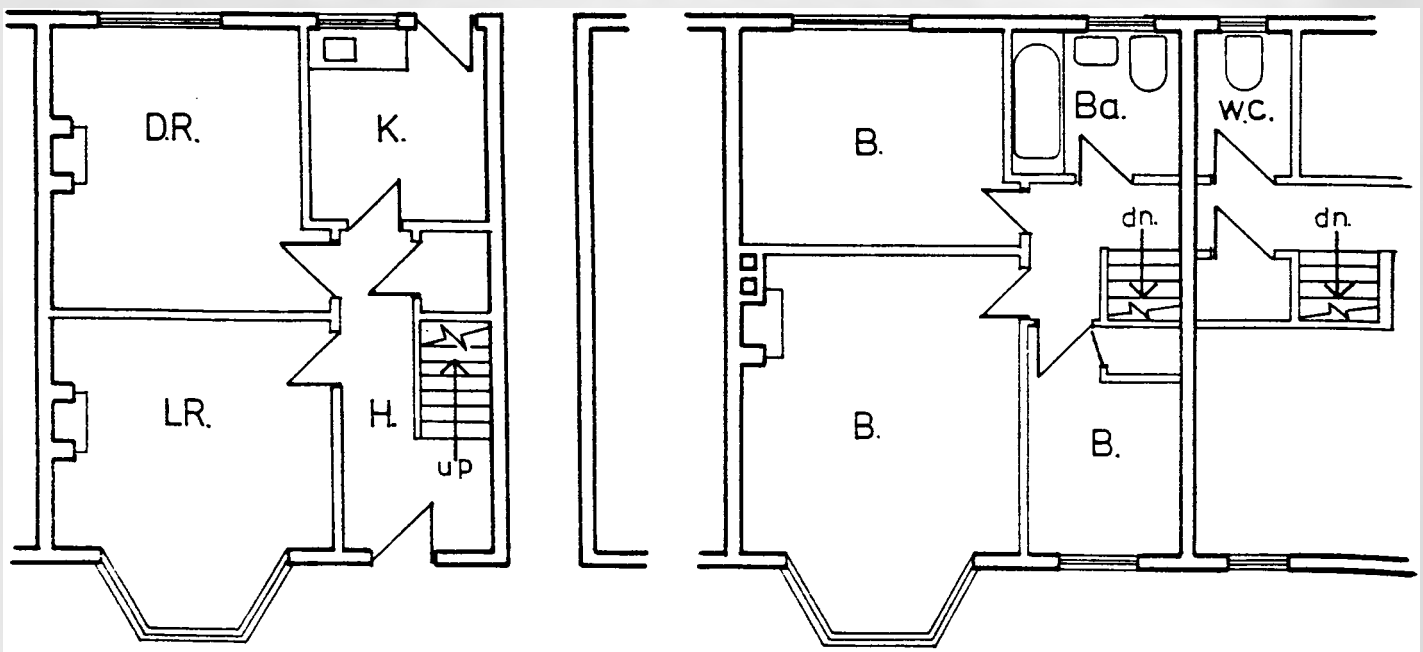


Fig. 7.2 TERRACED COTTAGE AT SOUTH HANDSIDE — WELWYN GARDEN CITY 1925 . LOUIS DE SOISSONS.

ground floor plan 1:100 first floor plan



As far as the inter-war years are concerned, they "... were poor years for British Architecture as a whole. Nowhere.... was this more apparent than in the large part of the three million or so houses that were provided for private ownership during this period. But at the same time there was a matter which.... was even more pressing than improvement in design. I refer to standards of construction.... In the early thirties public opinion was disturbed by what may be called a jerry building scare - a tiny minority of houses - less than five percent - but nevertheless the industry.... decided.... to take steps which would give a solid reassurance to public opinion."[3]

It is this period when the National House-Builder's Registration Council (N.H.B.R.C.) was formed - in 1936 - on the initiative of the National Federation of Building Trades Employers and the official approval of the Ministry of Health (M.O.H.) - the present Department of the Environment - with the purpose to issue Certificates of sound construction.

"... private enterprise built, in the years between the wars, three houses for every one constructed by local authorities."[4]

Also "... between the wars it was seen at its worst, when it came near to spoiling England completely. It produced ill looking houses in bad layouts. Orientation.... was almost entirely ignored.".[5]

".... particularly on the part of the less reputable firms, to an ever increasing degree before the World-War -II, there was a tendency to copy an attractive design from some publication (attractiveness being judged rather from the point of view of the ability to sell, than the intrinsic merits of the design), and to repeat that ad nauseau. This resulted in a degree of sameness which rendered large areas unsightly."[6]

Those developers who proclaimed 'every house different' avoided this 'sameness' not by different planning ... but by 'ringing the changes' between facing materials and tile colours and the mixing of hipped roofs and gables.

On the whole the design of the house itself was considered 'second last' throughout the interwar period, where there was little attempt to fit the envelope of the house to the size of the family, and so the vast numbers of average houses were literally 'built' rather than 'designed'. These were to serve the needs of the 'regular wage packet' lower income groups by contrast to the post-war-II period,where ownership was confined to those of the middle income groups.

"From 1933 the production of private enterprise reached a height never before attained. The output of 169,000 houses in the year ended 30th September, 1933, was succeeded in the next by an output of 260,000 houses, and from then onwards until the last year before the war private enterprise continued to produce at a rate of 250,000 a year, or more."[7]

During the second world war, naturally private house-building had to take second place to the need for building for military purposes; while after the armistice "the Labour Government.... imposed a ratio of private to publicly built houses which at one period was as low as one to ten. Indeed so tight was the licensing procedure that in 1950,... only 27,358 of the 198,171 houses built in Britain were for sale, the rest being for renting in the public sector.".[8]

This was the case until 1952 when a start in easing controls by the progressive abolition of the licensing system made possible a rapid expansion in the private sector.

Fig. 7.3 THE "Small Type" UNIVERSAL PLAN 1934.

ground floor plan 1:100 first floor plan

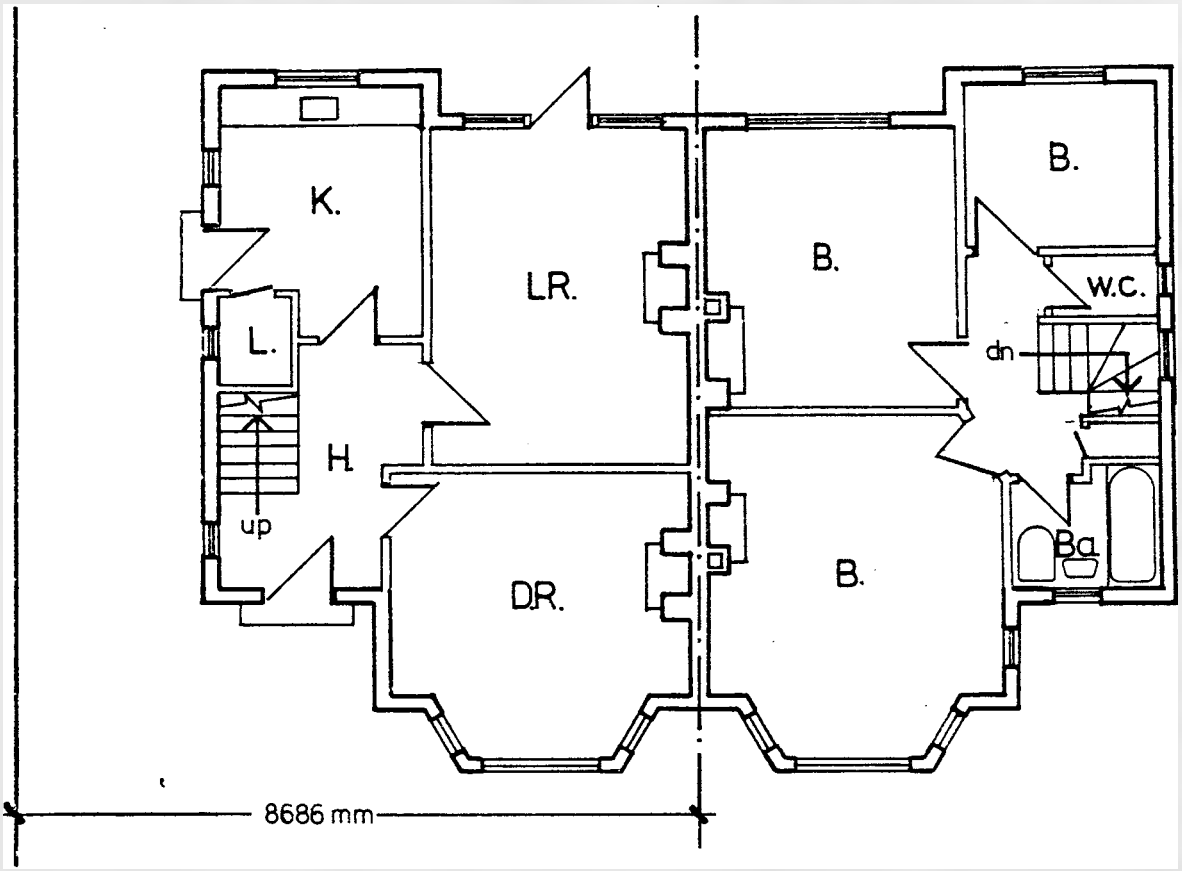
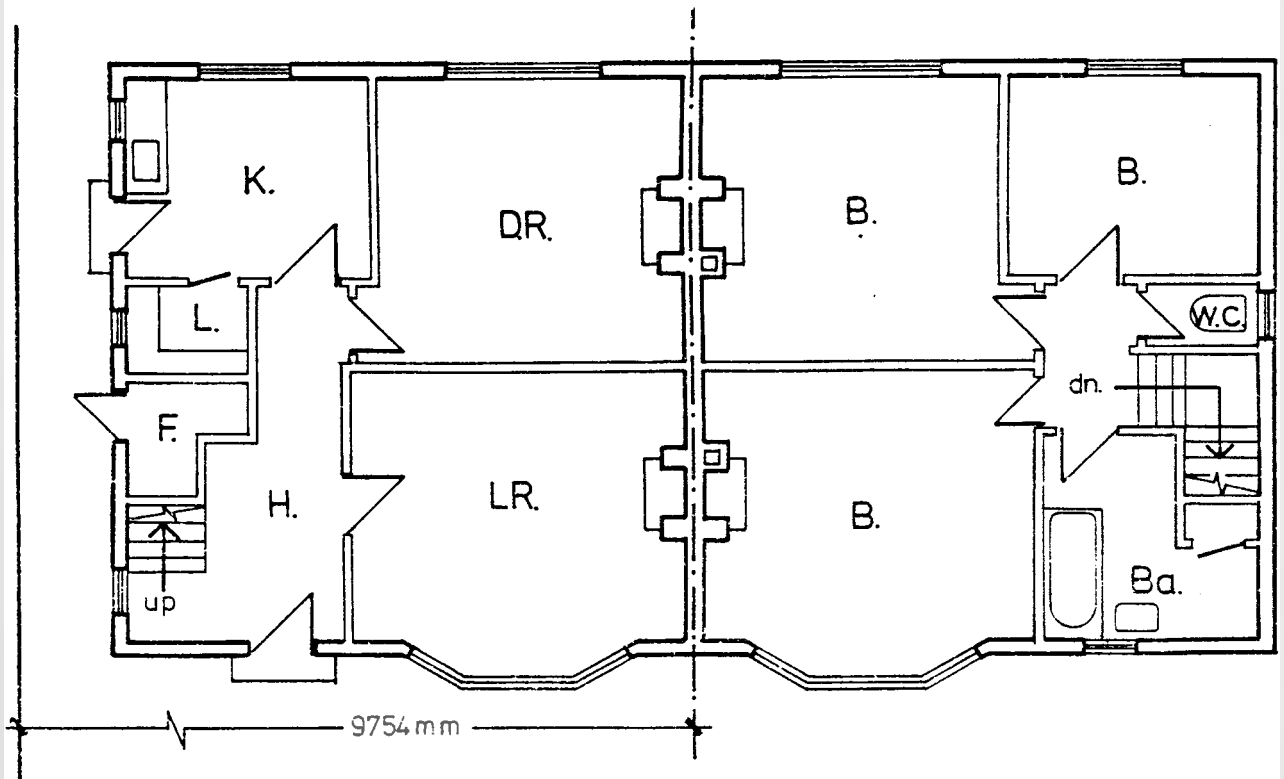


Fig. 7.4 THE "Intermediate Type" UNIVERSAL PLAN 1934.

ground floor plan 1:100 first floor plan



Section 7.1.2: The 'Universal Plan'

The most common type of dwelling which the speculative builder built between the wars was the 'parlour' type, which had derived from the 'garden cities' plans - as we have seen through the Port Sunlight - 1890, Bournville, and Welwyn Garden City - 1925, examples.

There are three main categories of this type of dwelling as follows:

a) the 'small type' with two or three bedrooms, Fig. (7.3)
b) the 'intermediate type' with three bedrooms of better size, Fig. (7.4) and
c) the 'larger type' with four bedrooms Fig. (7.5).

The 'larger type', especially in the provinces, often had a small scullery in addition to the kitchen, and a downstairs lavatory, with the separate W.C. upstairs.

The most widely spread type during this period (1919-1959) was the 'intermediate type' - the so called 'u n i v e r s a l p l a n'. This plan of the three bedroomed house had become stabilised to a 'form' which with slight variations was repeated almost universally.

Its planning was conditioned by the narrow frontage which resulted from economy reasons - to reduce road costs, Fig. (7.6).

It contains certain 'elements' which custom and public demand had decreed as necessary or desirable. These are the two 'living rooms' placed back to back, one or both with bay windows; the parlour with its big window facing the road, and the second sitting or living room at the rear with a french window giving access to the back garden either in a bay or straight window. There is also a small hall and a working kitchen adjoining the sitting room at the rear.

Fig. 7.5 THE "Larger Type" UNIVERSAL PLAN 1934 .

ground floor plan 1:100 first floor plan

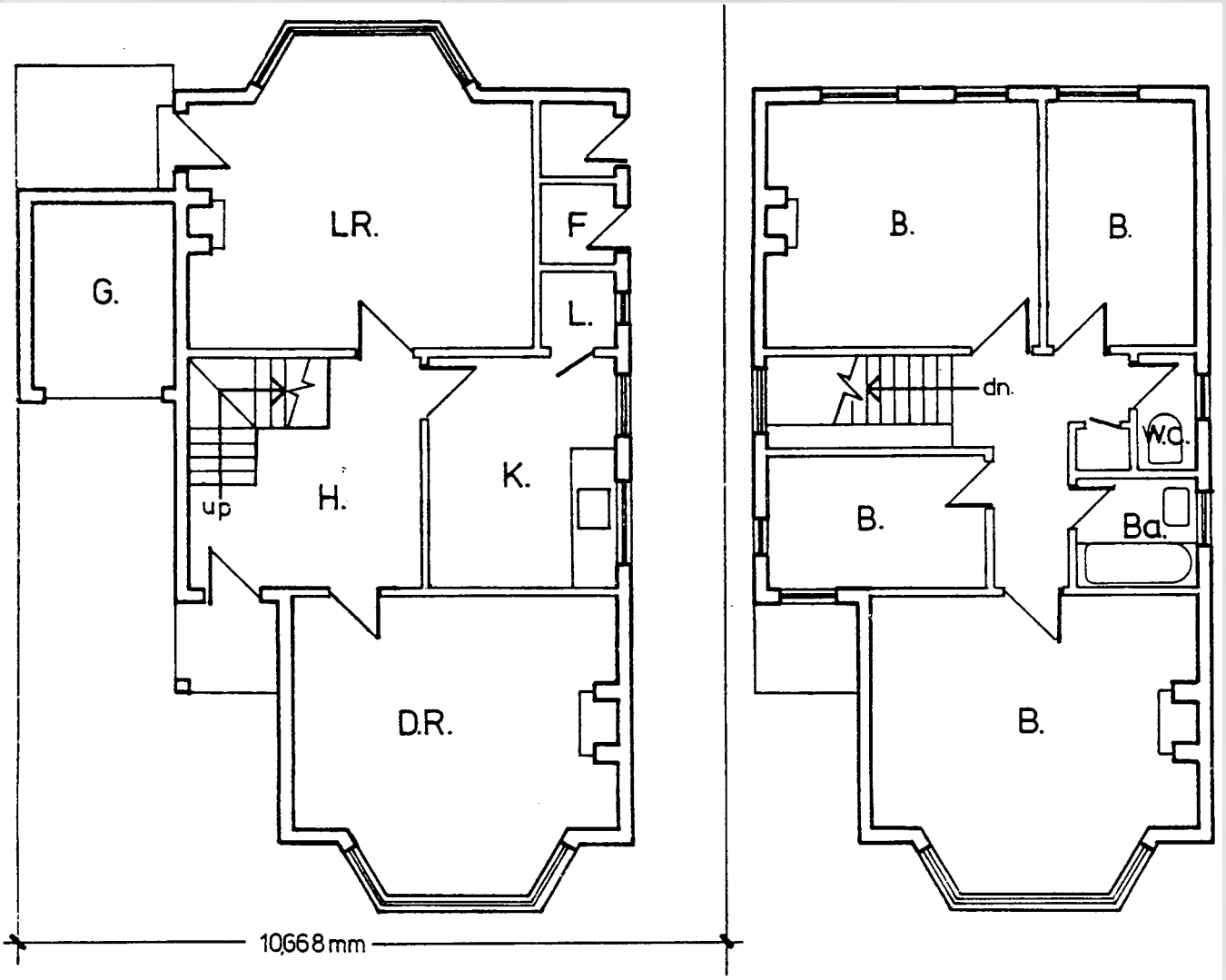
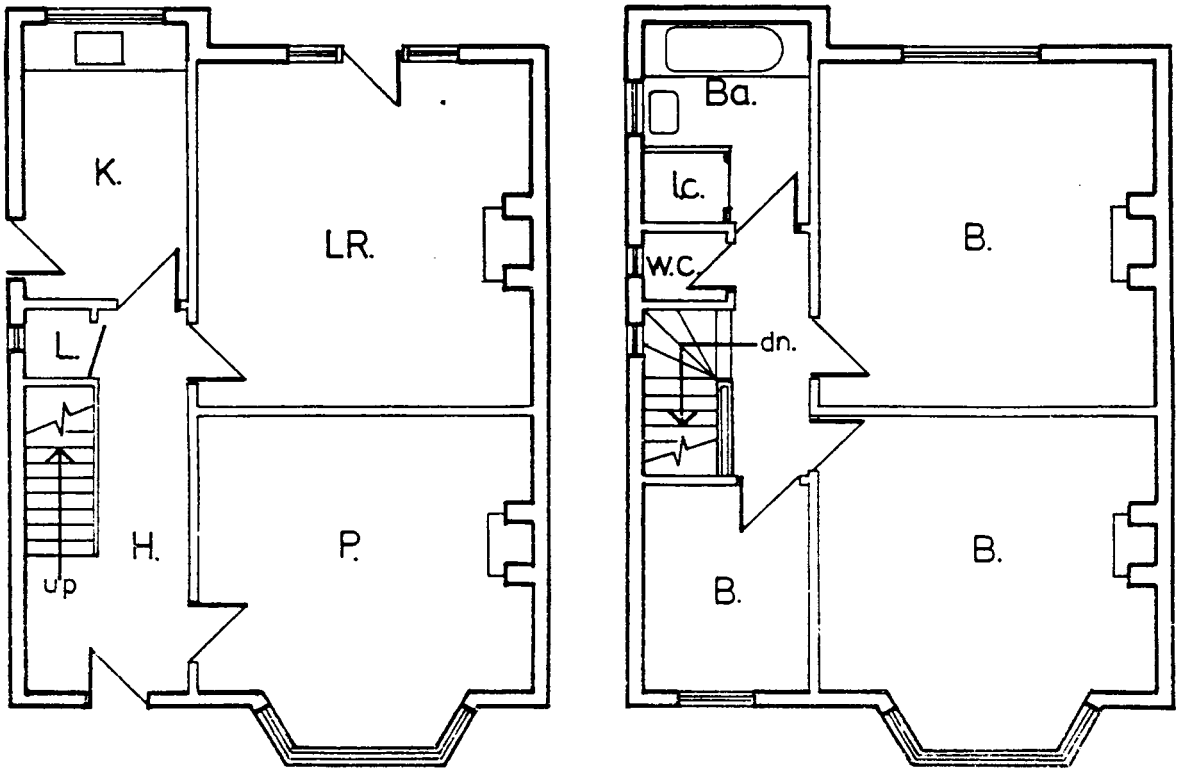


Fig. 7.6 THE UNIVERSAL PLAN 1934. 1:100



The entrance is next to the parlour bay-window, with the stair immediately opposite the front door, leading upstairs where there are two large bedrooms which may or may not have bay windows, a third small bedroom and a bathroom.

This plan is also found with slight variations such as slight changes in size, provision for a site width for a garage, a separate W.C., superior equipment in bathroom and kitchen, variations in soundness of building, the number of bay windows and the addition of 'features' such as gables or porches.

As far as its popularity is concerned, it was due to the fact that it embodied the desired elements in a plan area which it was next to impossible to reduce. It also represented good value to the lower-paid clerk, it looked 'respectable' to him, and in general gave him what he wanted; above all it did not look like a municipal house , a psychological point which it was fatal for the speculative builder to overlook.

References;

1. Hazzledine, Bill. "Spec-housing", Architecture East Midlands, No. 27, Nov.-Dec., 1967, p.24.

2. Ibid., 25.

3. Wates, Norman. "Can private enterprise help local authorities to carry out the new housing policy? The contractor's viewpoint." Housing Centre Review, 23rd July, 1954, pp.34-35.

4. N.F.R.H.B. (National Federation of Registered House-Builders). Memorandum upon the physical reconstruction in Britain, 26th April, 1944, paragraph 11.

5. Culpin, Clifford. "Can private enterprise help local authorities to carry out the new housing policy? The architectural aspect." Housing Centre Review, 23rd July, 1954, pp.27,32.

6. N.F.R.H.B., Op. Cit., paragraph 20.

7. H.M.S.O. "Private Enterprise Housing", The Felix Pole Report, C.H.A.C., M.O.H., 1944, p.19.

8. Smith, Mary, E.H. "A guide to housing", Housing Centre Trust, 1971, p.29.

CHAPTER 8: Housing Standards

Section 8.1.1: N.H.B.C. Design Standards

They were brought out in January 1961 and include the Parker Morris recommendations on storage accommodation, kitchen layout, a separate w.c. in larger dwellings and more electric socket outlets.

But they did not become mandatory in full until 1st June, 1969. They are as follows:

a) Kitchen layout: Clause De. 2(a).

The kitchen planning compulsory requirements[1] are given on the following pages which also show alternative planning arrangements by which the compulsory requirements are met, see Figs. (8.1, 8.2, 8.3 and 8.4), overleaf.

b) W.C.s: Separate w.c. compartment in houses over 800 sq. ft.: Clause De. 2(b).

"If a dwelling has a floor area over 800 sq. ft. - or 750 sq. ft. where the dwelling is on one floor only - and only one w.c. is provided, this must be in a separate compartment. Every compartment containing a w.c. appliance shall also contain a wash basin unless the w.c. compartment immediately adjoins a bathroom or other compartment containing a wash basin."

This does not mean that there should be two w.c.s. It means only that the w.c. should be separate from the bathroom. If it is next to the bathroom, it need not have a washhand basin. If it is not next to the bathroom, it must have. This follows the Parker Morris recommendations.[2]

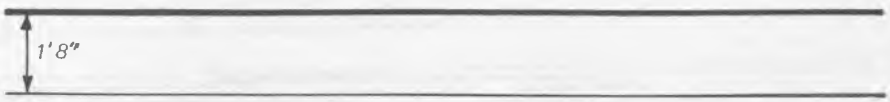
c) Storage accommodation:
"Every dwelling shall be provided with:

1) Enclosed domestic storage accommodation in or easily accessible to the kitchen in accordance with the

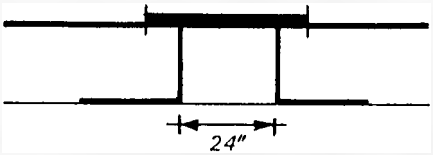
Clause De.2(a) Kitchen Planning—Compulsory Requirements

Every kitchen shall be so designed as to provide: Fig. 8.1

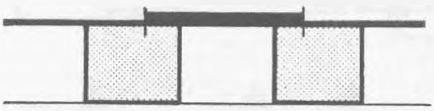
1. Space for work surfaces, not less than 1′ 8″ from front to back



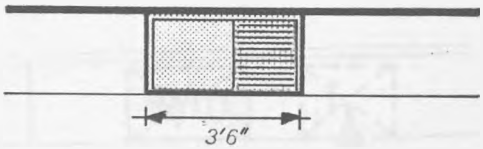
2. (i) A clear space of not less than 24″ wide, together with such piping, cables, or other apparatus, as may be necessary to enable a gas, electric or oil cooker to be installed, such space not to be under a window or
(ii) A solid fuel cooker designed for continuous burning with adequate constructional provision for the disposal of the products of combustion and not located under a window.



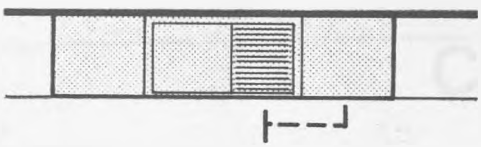
3. A work surface on either side of the cooker.



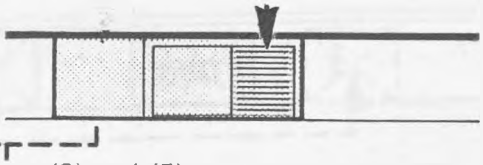
4. A sink with at least one drainer (independently or as a combined unit), the whole to be not less than 3′ 6″ wide in all.



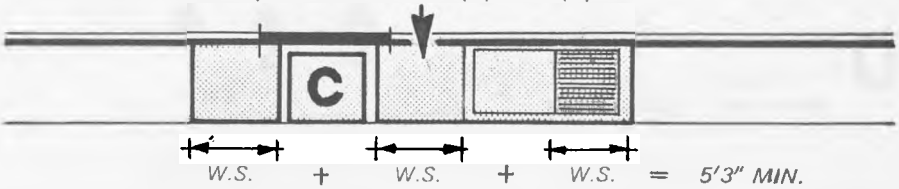
5. A work surface on each side of and immediately adjacent to the sink.



(a) The drainer may be included as a work surface.



(b) One work surface may be common to (3) and (5).



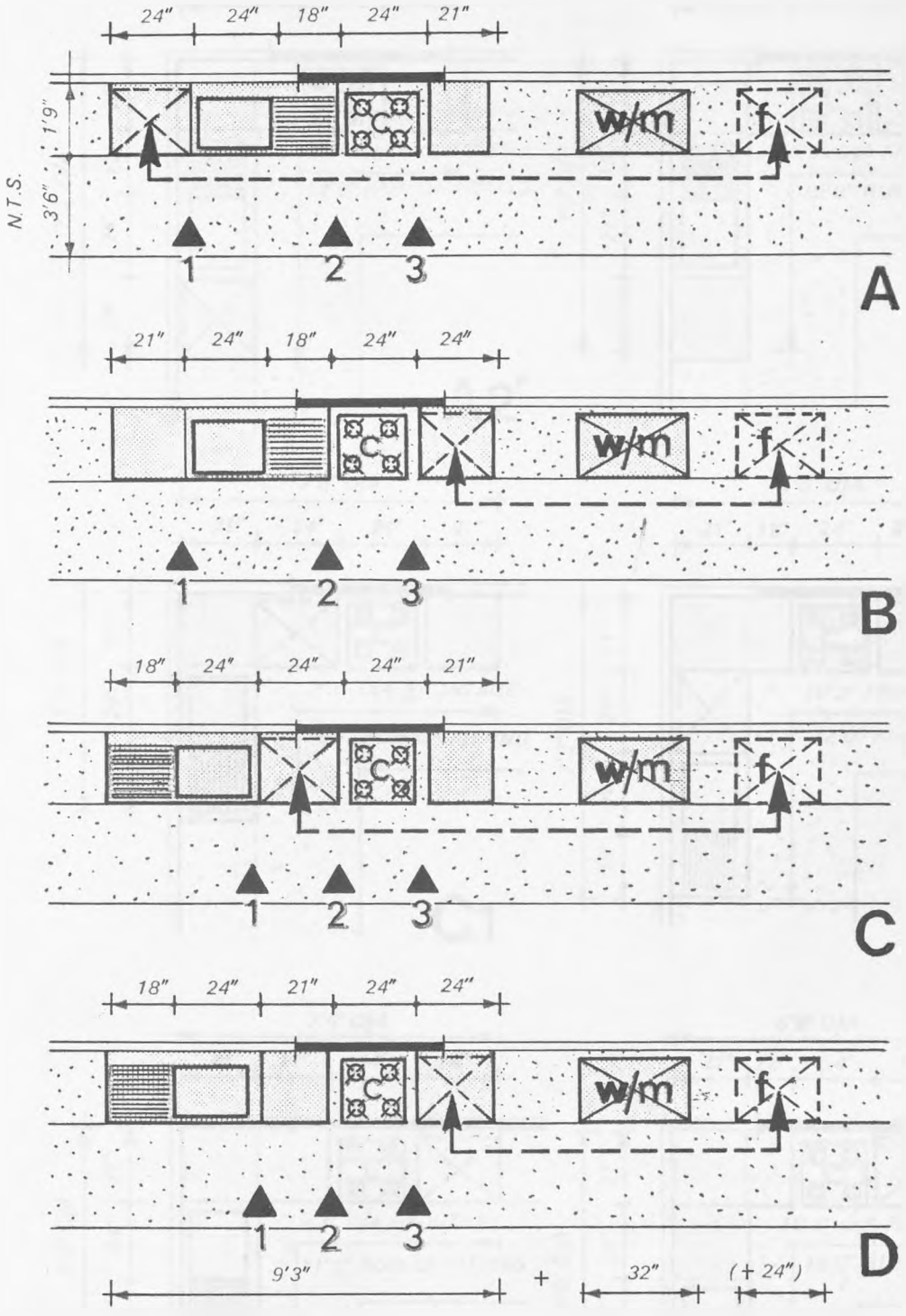
6. The aggregate width of the space available for work surfaces, including the drainer, shall be not less than 5′ 3″ and no single space shall be less than 1ft. in width.

7. Through access between sink and cooker should be avoided.

8. Two clear spaces for storage or installation of other appliances, one space to be not less than 24″ wide and one space to be not less than 32″ wide. These spaces may be incorporated with those required for work spaces on the assumption that the appliances will fit under any work surfaces ultimately installed.

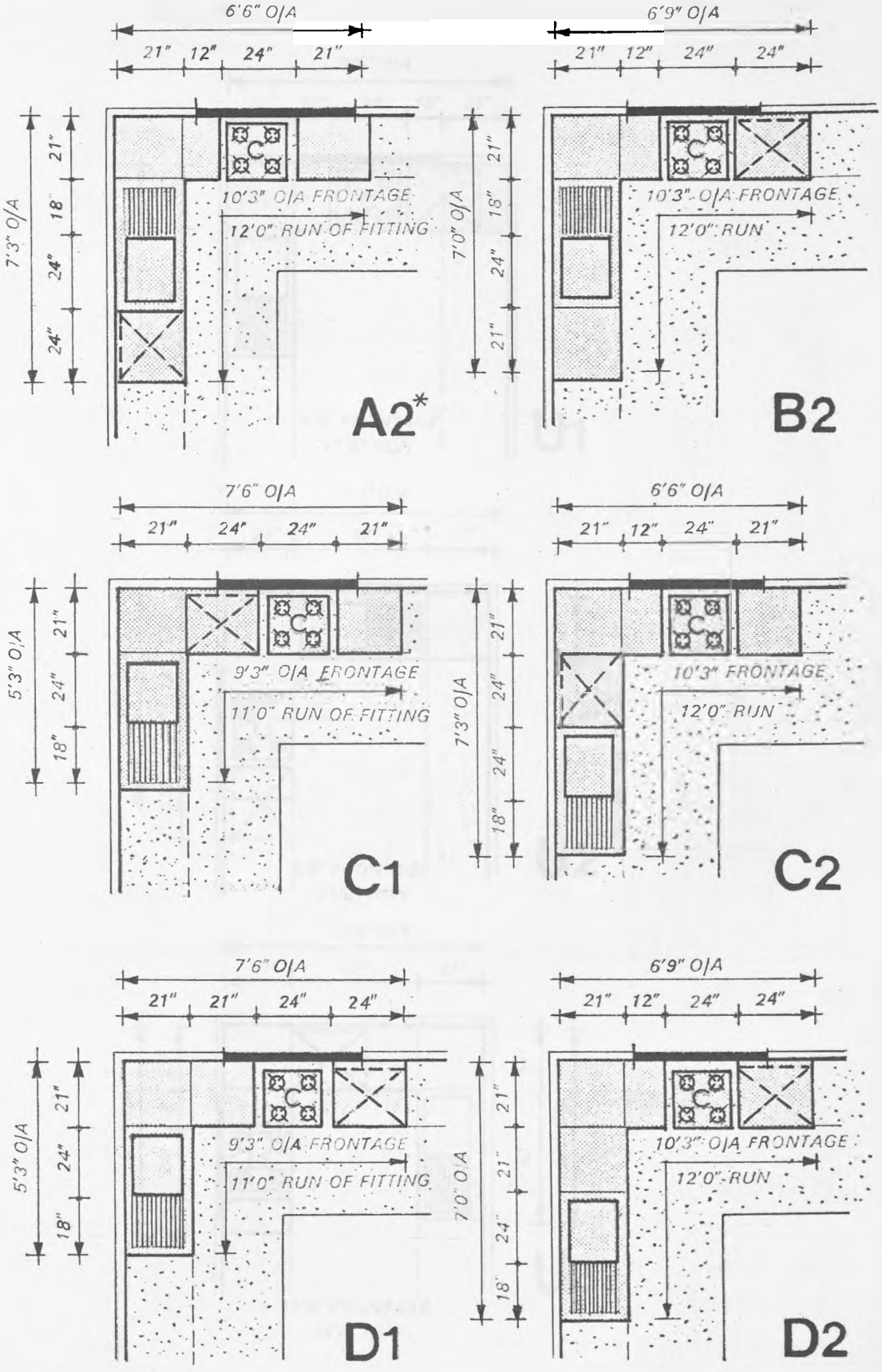
Straight-Wall Plans that comply

Fig. 8.2



▲ This symbol indicates positions at which returns may be formed (see next page) fig. 8.3, 8.4

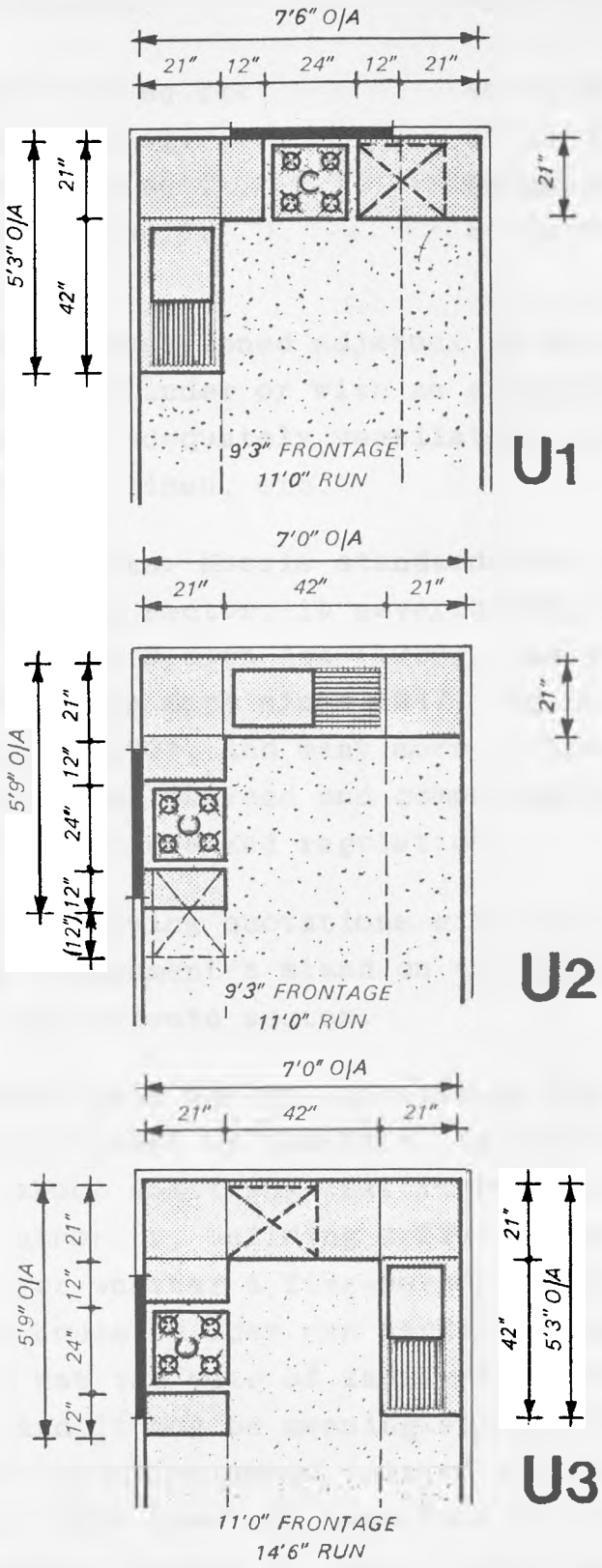
L-Shaped Plans that comply Fig. 8.3



*The numeral identifies the position of the return in relation to the straight line arrangements shown on the previous page fig. 8.2 .

U-Shaped Plans that comply

Fig. 8.4



following table;

Floor area of Dwelling	Minimum Storage Space Required
Under 400 sq.ft.	40 cu.ft. (1.13m^3)
400 - 600 sq.ft.	50 cu.ft. (1.41m^3)
600 - 800 sq.ft.	60 cu.ft. (1.70m^3)
Over 800 sq.ft.	80 cu.ft. (2.26m^3)

2) A cupboard positioned adjacent to or enclosing the hot water cylinder or with an alternative method of heating and adequately ventilated, for the airing or domestic linen, etc."

While Parker Morris standards are not mandatory for the private sector, it nevertheless has to 'live' with the Public Health Act (1936), the various Town and Country Planning Acts since 1947, the Building Regulations (1976), and many more, all of which are constantly being revised and compounded into a stream of instruments, orders and regulations.

The following quotations give us a clear indication as to the Government's stand on the housing standards issue in the private sector.

"Here again we come up against the issue of how far the Government is justified in employing compulsion to bring about something that it regards as desirable ... A local authority, building a five-person house has some control over whether a five-person family moves into it. A private house builder can hardly ensure that the purchaser has the size of family for which the house is intended and it may be meaningless for him to adopt a particular space standard related to a particular family size. But this does not mean that we do not encourage private sector houses to adopt Parker Morris standards

wherever possible. On the contrary,... we have given our full support to the N.H.B.R.C. and its activities."[3]

"We must all try to maintain a balance between the need to raise standards and the need to meet requirements of house purchasers within costs which they can afford... The best way of securing progressive improvement in the standards of private houses is by encouraging builders to register with the N.H.B.R.C...."[4]

"The membership of the N.H.B.R.C. is growing steadily and registered builders now account for about 70% of all houses built in the private sector."[5]

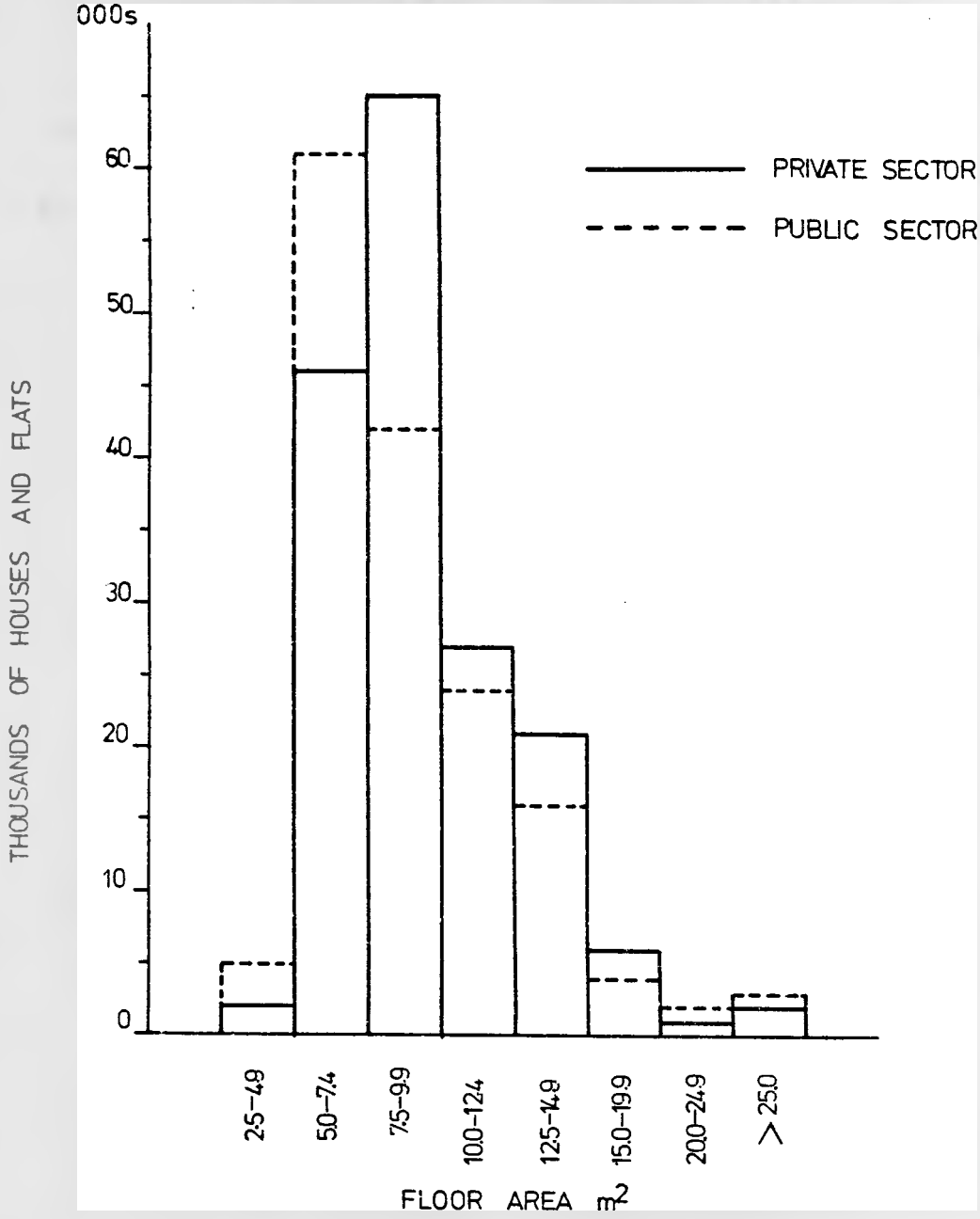


Fig. 8.5 NEW HOUSES AND FLATS COMPLETED IN GREAT-BRITAIN IN 1970 CLASSIFIED BY THE FLOOR AREA OF THEIR KITCHENS

Sourse: Building Statistical Services Report "Kitchens in New Homes" 1970, Table 1, page 8.

Section 8.1.2: Kitchen Planning

The Parker Morris report was critical of the kitchen planning of private sector dwellings, thus: "At the present time.... although in private enterprise kitchens there is much more attention paid to appearance and cheerfulness there is lacking still the thought and organisation that can make a kitchen an efficient and satisfactory place to work in...."[6]

The kitchen "... should comprise work surface/ cooker/work surface/sink/work surface, (or the same in reverse order), unbroken by a door or other traffic way... analysis of plans.... showed that only 5% of kitchens conformed to this not very exacting standard whereas one quarter showed no recognisable sequence at all."[7]

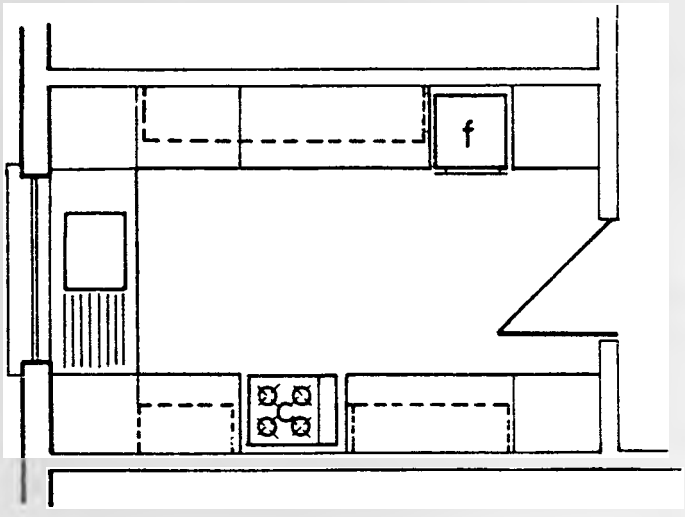
After an examination of some eighty plans of dwellings, in mid-sixties, of four large 'progressive' building firms, covering England and Wales, it was found that:"Kitchens were less generously planned; the most usual size was about 75 sq.ft. and only about a quarter exceeded 100 sq.ft. Although many had expensive fittings, the work sequence was poor in half of the plans."[8]

In 1970 another survey[9] was carried out by the Building Statistical Services based on random sample design of new houses' and flats' kitchens throughout Britain, the findings of which are as follows,

1) Houses and flats classified by the floor area of their kitchens: Fig. (8.5).
   It shows that the majority of private kitchens fall within the range of 7.5 - 10 m^2 (80.7 - 107.6 sq.ft.), by contrast to the public sector kitchens which fall within the 5.0 - 7.5m^2 (53.8 - 80.7 sq.ft.) range.

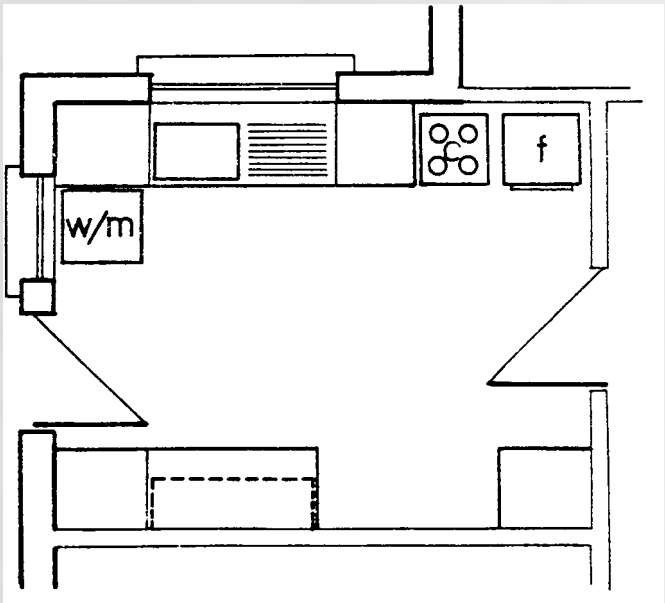
Fig. 8.6 TWO EXAMPLES OF THE KITCHENS IN THE 1970 B.S.S. SURVEY'S SAMPLE.

"This is the perfect kitchen; we worked in close collaboration with the architect. Our only complaint is that the water pressure is low."
Occupier's comment.



Flat. North-West England 1:50

"Our kitchen is light and airy and of an adequate size. There are insufficient working surfaces and the cupboards are badly positioned."
Occupiers comment.



Detached House. Scotland 1:50

More than one third of all private sector kitchens fall within the 7.5 - 10 m^2, with a nearly equal percentage of 37.2 of the kitchens exceeding 10 m^2 of floor area.

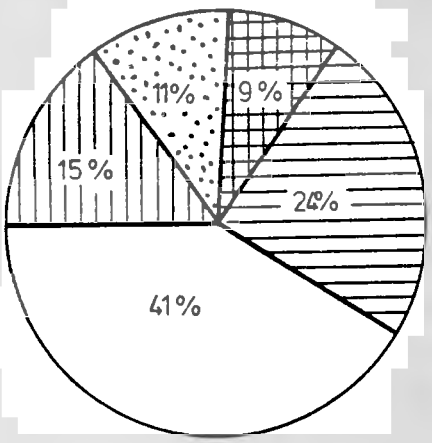
2) Occupier's comments on their kitchens' design features: Each of the privately-owned dwellings' occupiers in the survey's sample were asked to comment on the two best and the two worst features of the design of their kitchen. Their comments analysed to give an indication of the order of importance of design features, have given the following results:

71% of the sample commented on the provision and position of cupboards; 47% on the size of the kitchen; 37% on lighting; 16% on finish of paintwork of units and floor; 15% on the general planning and layout of their kitchen; 13% on positioning and provision of doors; 11% on the provision of space for domestic appliances; 10% on the provision of sinks, drainers and waste disposal units; 10% on heating; 9% on the provision and position of power points; 9% on the provision of a dining area; and 5% on ventilation.

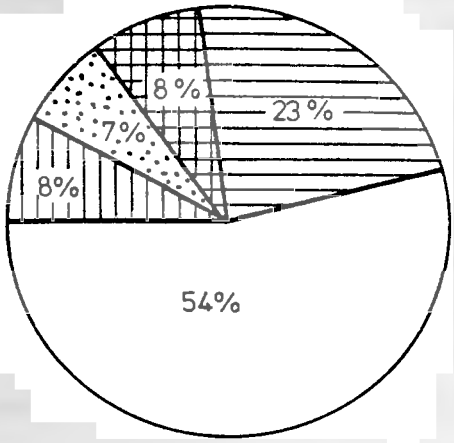
This analysis shows that three subjects attracted far more widespread attention and comment than any other, namely the provision and position of cupboards, the size of the kitchen and its lighting.

Two examples of the kitchens in this survey's sample are given on the facing page with their occupier's comments as well, Fig. (8.6).

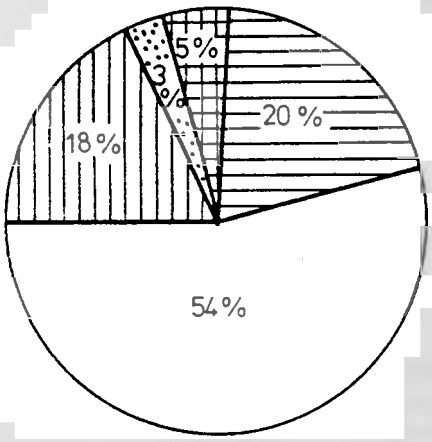
Fig. 8.7 FLOOR AREAS OF ALL TYPES OF PRIVATE SECTOR HOUSES OF ENGLAND AND WALES 1920-1962 .



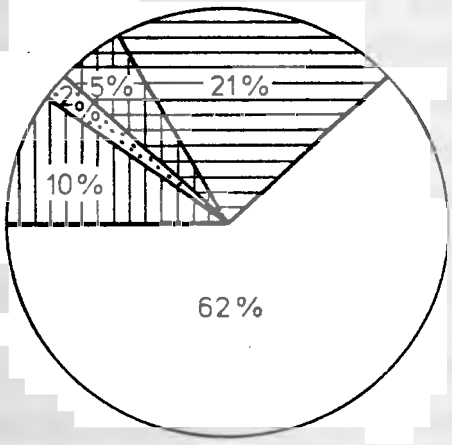
Before 1920



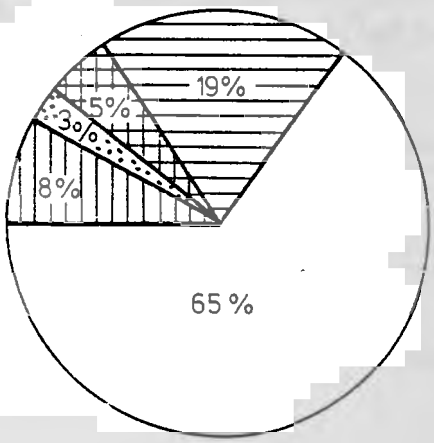
1921 - 1930



1931-1940



1951-1961



1962

= <750 ft^2

= 751-999 ft^2

= 1000-1249 ft^2

= 1250-1499 ft^2

= >1500 ft^2

Source: Attenburrow J.J. Hole V.W. "Houses and People" 1966, B.R.S., H.M.S.O., page 50

Section 8.2.1; Broad Space-Standards' Trends: 1920-1962 England and Wales

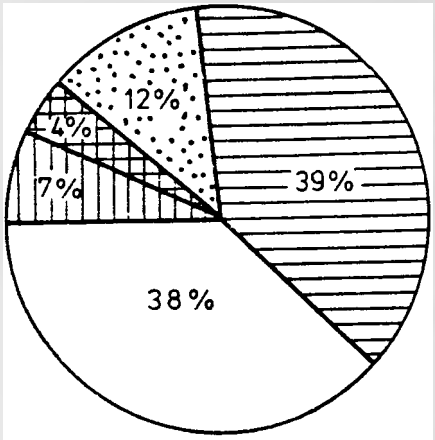
During the forty years period in question, from 1920 to 1962, on average, more than 55% of all types of houses built have floor areas falling within the 750 - 1,000 sq.ft. (69.6 - 93m^2) range, see Fig. (8.7).

A decrease in the percentage of houses with floor areas below 750 sq.ft. and above 1,000 sq.ft. is also noticeable.

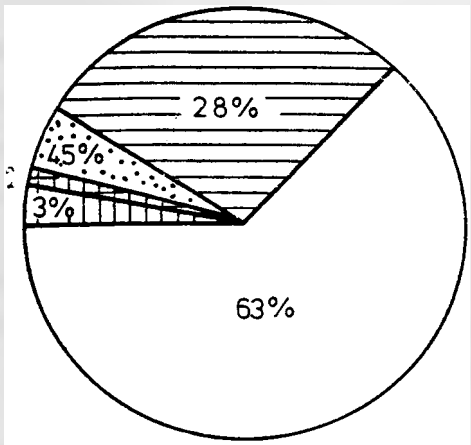
In particular, the number of semi-detached houses - with two dayrooms, three bedrooms, and floor area 750 - 1,000 sq.ft. - built during the above period has nearly doubled, while the number of semi-detached houses with floor areas within the 1,000 - 1,250 sq.ft. range has been falling gradually since 1920, see Fig. (8.8), overleaf.

An examination of some eighty plans of dwellings, offered by four large private building firms in the mid-sixties, two of which have gained a reputation of forward looking designs, shows that: "The overall floor area of these houses ranged from 500 to 2,000 sq.ft. ... The group of plans... contained more terraced houses and flats and maisonettes than could be found generally. The accommodation included two-person and large family houses... Although this selection represents a good class of house, it is notable that plans which exceed the minimum standard by more than 200 sq.ft. were in the minority."[10] see Fig. (8.9), overleaf.

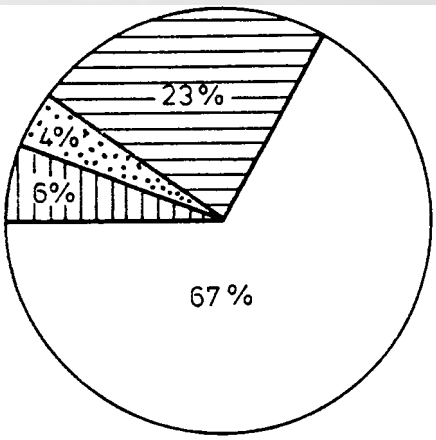
Fig. 8.8 FLOOR AREAS OF THE 3-BEDROOMED SEMI-DETACHED PRIVATE SECTOR HOUSE OF ENGLAND AND WALES 1920-1962



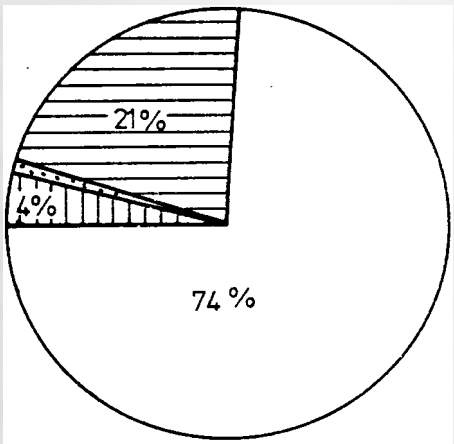
Before 1920



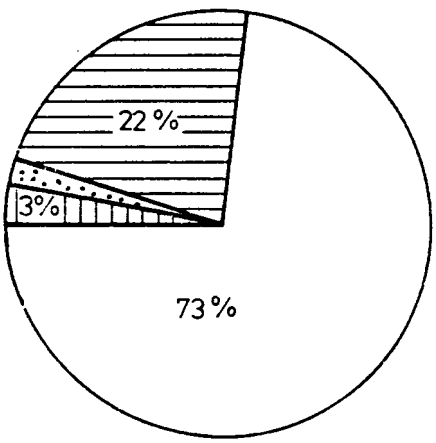
1921–1930



1931–1940



1951–1961



1962

= < 750 ft^2

= 751-999 ft^2

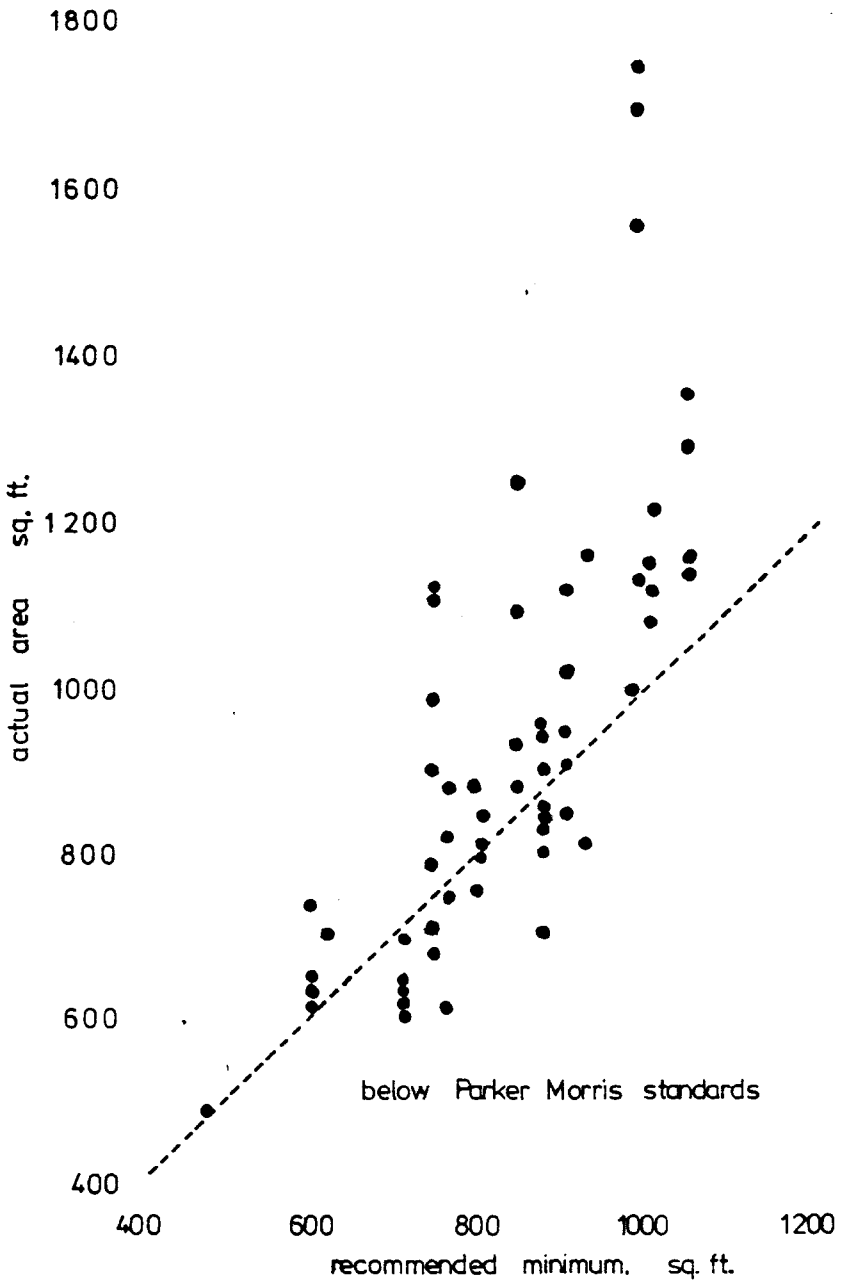
= 1000-1249 ft^2

= 1250-1499 ft^2

= > 1500 ft^2

Source: Attenburrow J.J., Hole V.W., "Houses and People" 1966, BRS, HMSO, page 49.

Fig. 8.9 RELATION OF ACTUAL FLOOR AREAS TO PARKER MORRIS RECCOMMENDED AREAS IN SELECTION OF PRIVATE BUILDERS' PLANS. Mid-Sixties .



Sourse: Attenburrow J.J., Hole V.W. "Houses and People" 1966, B.R.S., H.M.S.O., page 51.

Section 8.2.2: An Insight into the Private vis-a-vis the Public Sector Dwelling-Standards: 1964-1972 Great Britain

By contrast to the wealth of information of new constructions in the public sector, supplied by the D.O.E. Housing and Construction Statistics since the world-war-II, there is very little information on new housing built by the private sector.

Such information on new private construction, was provided by sample surveys, carried out since 1964 by a private organisation named B.S.S. (Building Statistical Services), and published as Annual Surveys of New Construction.

It is these data that have been analysed here. These surveys covering the whole of Great Britain - with the exception of the 1964 survey which was confined to England and Wales - were discontinued in 1973, while there were no surveys for the 1965 and 1970 years.

1) Houses and flats classified by type:

General: "The classifications of some of the sample dwellings depends critically on the exact definition of the types; these are as follows:

Flats: single-storey dwelling in a building containing at least one more storey than the flat.

Maisonette: dwelling of two or more storeys in a building with at least one more storey than the maisonette.

House: dwelling of two or more storeys in a building with no other storeys above or below, with a fixed staircase to the

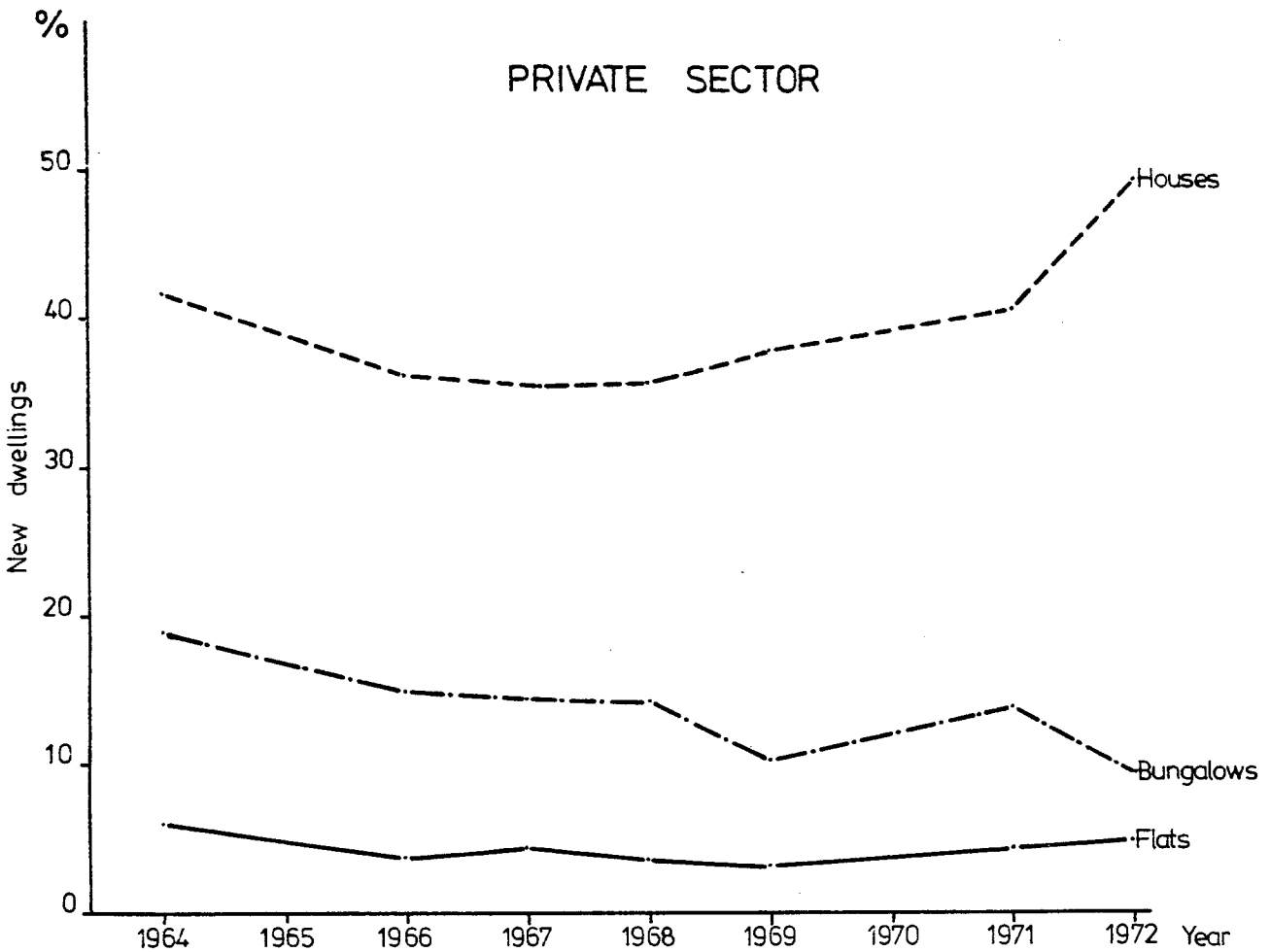
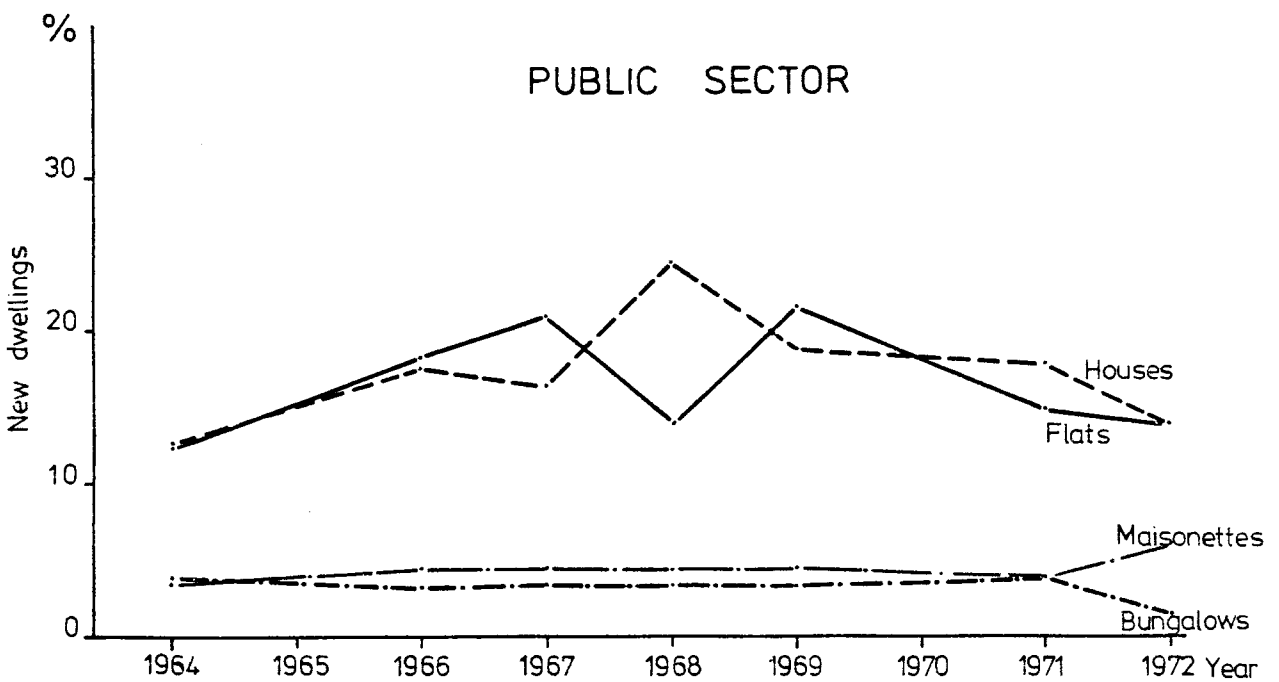


Fig. 8.10 PERCENTAGE ANALYSIS OF NEW DWELLINGS CLASSIFIED BY TYPE. 1964-1974 .



upper floor, and with living spaces on the upper floor.

Bungalow: dwelling of one storey in a building with no other storeys above or below. (Bungalows may have loft ladders to any upper storey. 'Chalet bungalows' are counted as houses).

Terraced: dwelling with two separate sections of perimeter wall common with two separate neighbouring dwellings.

End-of-terrace: dwelling with one section of perimeter wall common with a neighbouring dwelling which would be classified as terraced.

Semi-detached: dwelling with one section of perimeter wall common with a neighbouring dwelling which would not be classified as terraced.

Detached: dwelling with no section of its perimeter wall common with another dwelling. (Perimeter walls common between a dwelling and a garage, or between two garages, are not counted as perimeter walls common between two dwellings in the above definition)."[11]

The type of houses that the private market built most are mainly semi-detached or detached houses with the number of detached bungalows slowly but steadily increasing since 1964, in the third place.

By contrast the public sector, from early sixties, built flats followed by houses, to become by mid-sixties about fifty-fifty. A percentage analysis of the new houses and flats classified by type is shown in Fig. (8.10).

2) Houses and flats classified by net internal floor area:

General: "The net internal floor area is measured to the inside of the perimeter partitions. Areas covered by partitions, or chimney breasts, and areas to which access could not be obtained were excluded. Loft spaces were included if they had boarded floors which could be walked on, and if access could be obtained to them by opening a door; otherwise they were excluded. All communal areas such as staircases, landings, were excluded."[12]

On average, during the 1964-1972 period, 68% of the completed dwellings have net internal floor areas between 600 - 900 sq.ft. (55.74 - 83.61m^2). Of these dwellings 39% were built by the private sector while the other 29% built by the public sector.

Nearly all those with larger floor areas are private sector built dwellings.

3) Houses and flats classified by internal equipment:

(i) Number of wash basins:
Very few houses and flats of local authority and only 6.6% of the houses and flats out of all private completions had more than one wash basin, in the 1964 survey. Nevertheless by 1969 the number of private houses and flats having more than one basin increased to 29% with a parallel increase in the public sector dwellings too.

(ii) Number of W.C.s:
Proportionately more houses and flats of the private sector had two w.c.s, (and some had three), than those of the public sector, in the 1964 survey.

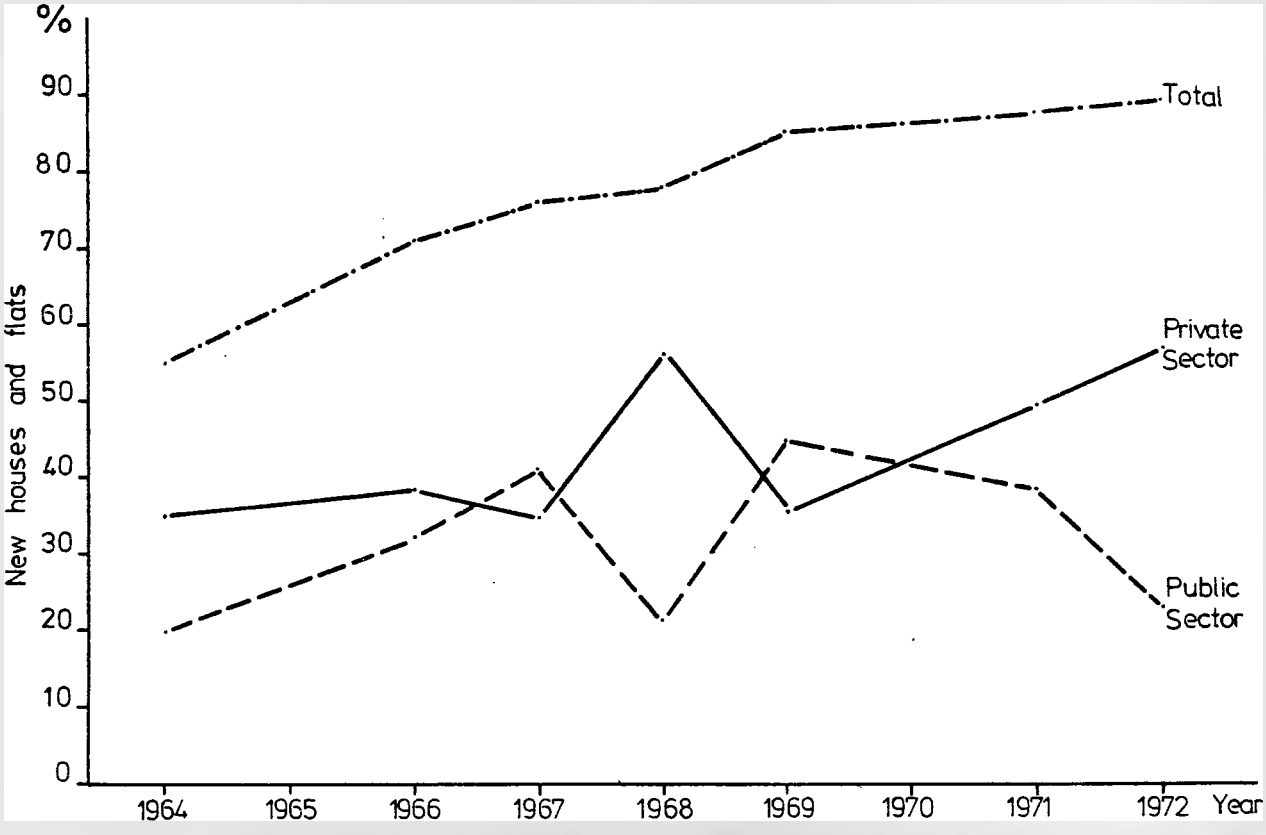


Fig. 8.11 PERCENTAGE ANALYSIS OF NEW HOUSES AND FLATS CLASSIFIED BY HEATING. 1964-1942.

Some 10% of houses and flats had more than one w.c. compared with nearly 20% of private sector, (1966 survey), while by 1969 24% of all houses and flats of both sectors had more than one w.c. (1969 survey).

4) Houses and flats classified by heating:

(i) Type of central heating

The percentage analysis shown here indicates clearly the increasing percentage of dwellings with some form of central heating from 55% in 1964 to 89% in 1972, see Fig. (8.11).

It is quite important too, to note the dimishing percentage of local authority dwellings without some form of central heating from a 15% in 1964 down to 2% in the early seventies.

In the private sector the percentage of dwellings with central heating rose from 35% in 1964 to 55% in 1972.

The surveys also showed that gas radiator systems were most frequently used in private sector dwellings, followed by solid fuel systems, gas-warm-air systems and electric underfloor heating.

Gas-warm-air systems were most frequent in local authority dwellings followed by electric heating systems.

In both sectors, most of the heating systems were not designed to heat all the major living places of the house.

(ii) Number of fixed heating appliances:

"A fixed heating appliance was defined as one which requires the use of tools in order to remove it. Fan heaters, paraffin heaters and the like were therefore excluded."[13]

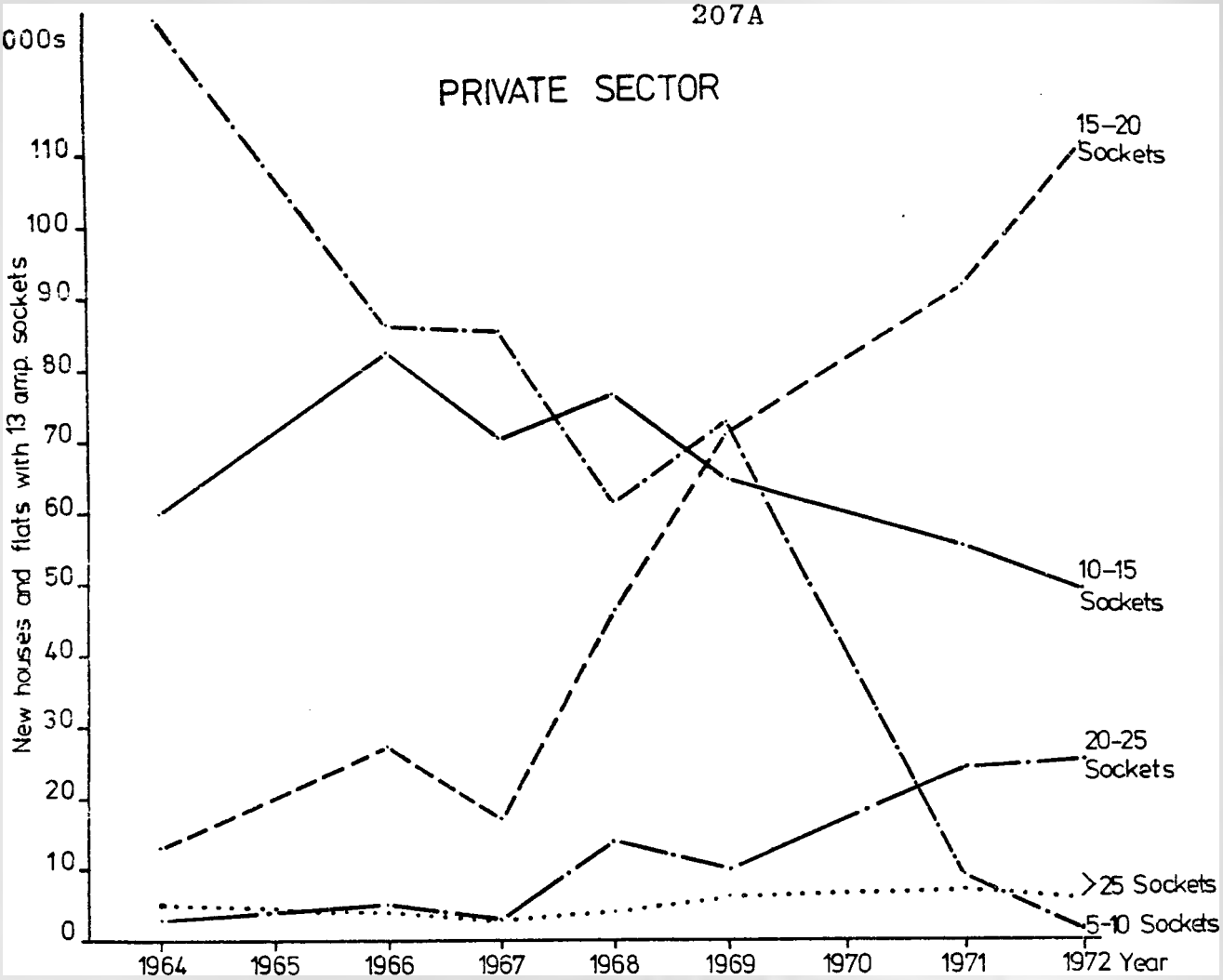


Fig. 8 12 NEW HOUSES AND FLATS CLASSIFIED BY NUMBER OF SOCKET OUTLETS.

PUBLIC SECTOR

Figures for the 1964 survey showed that the most common number of heating appliances for dwellings of both sectors was one.

By 1967 the most 'common number' for dwellings for private owners became two heating appliances, while for the local authority dwellings remained one heating appliance.

5) Houses and flats classified by number of lights and socket outlets:

"Clusters of light bulbs on one fitting were counted as one. Sockets were counted only if they were 13-ampere square pin socket outlets. Double socket outlets were counted as two."[14]

On average private sector dwellings have ten lights and thirteen sockets compared with the average of nine lights and twelve socket-outlets in public sector dwellings, see Fig. (8.12).

From 1970 onwards, in both housing sectors, the number of dwellings with ten to fifteen lights was substantially improved; while a slow but noticeable increase in the number of private sector dwellings with fifteen to twenty lights was also taken place.

6) Houses and flats classified by type of garage and garage floor area:
"Floor areas were measured inside the garage, up to the line of the inside of the garage floor when closed. In some cases coal stores or workbench areas were partitioned off inside the garage; such areas were included with the garage."[15]

On average for the 1964-1972 period, 65% of the garages had a floor area in between 120 to 159 sq.ft. (11.14 - 14.77m^2).

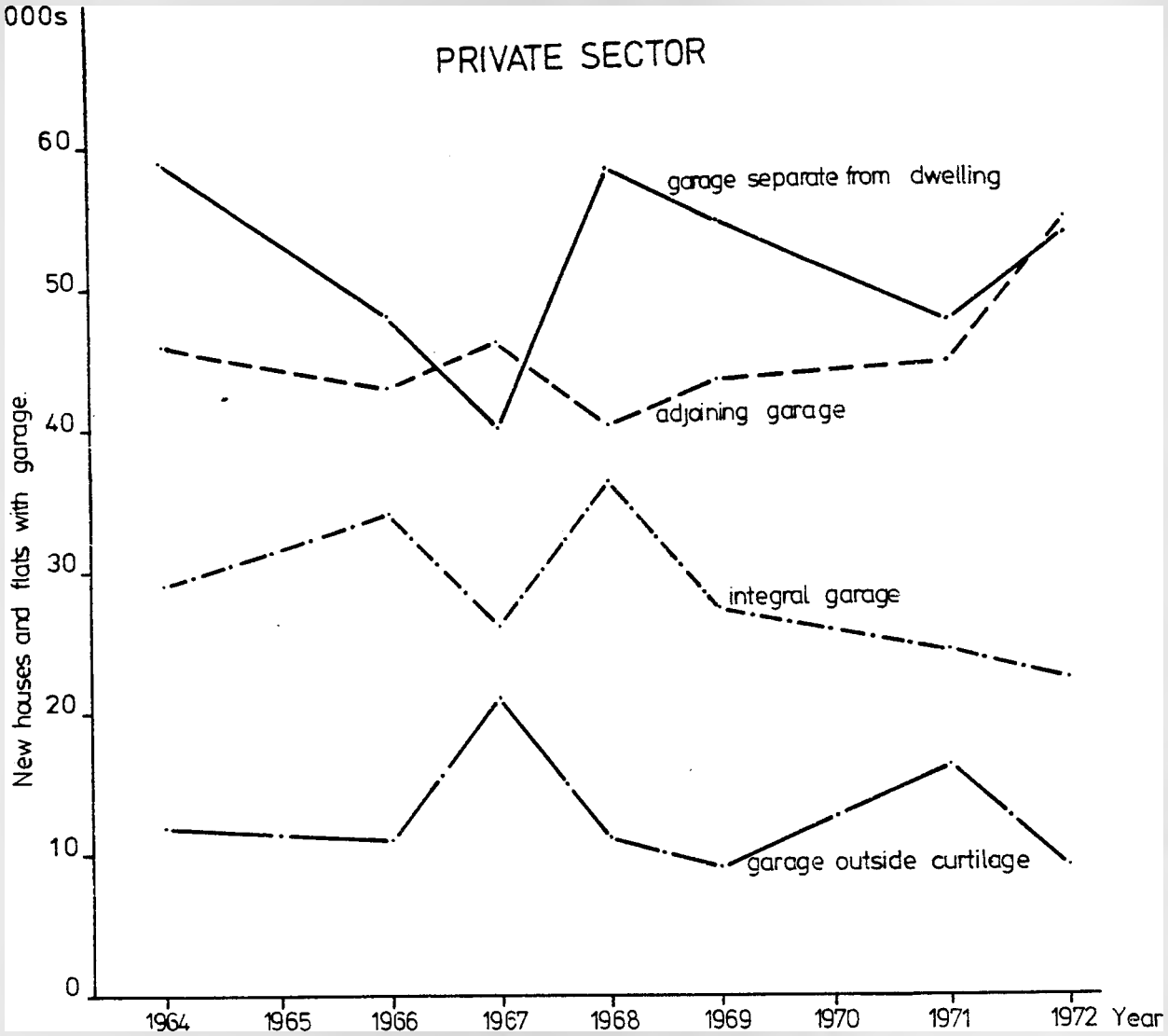
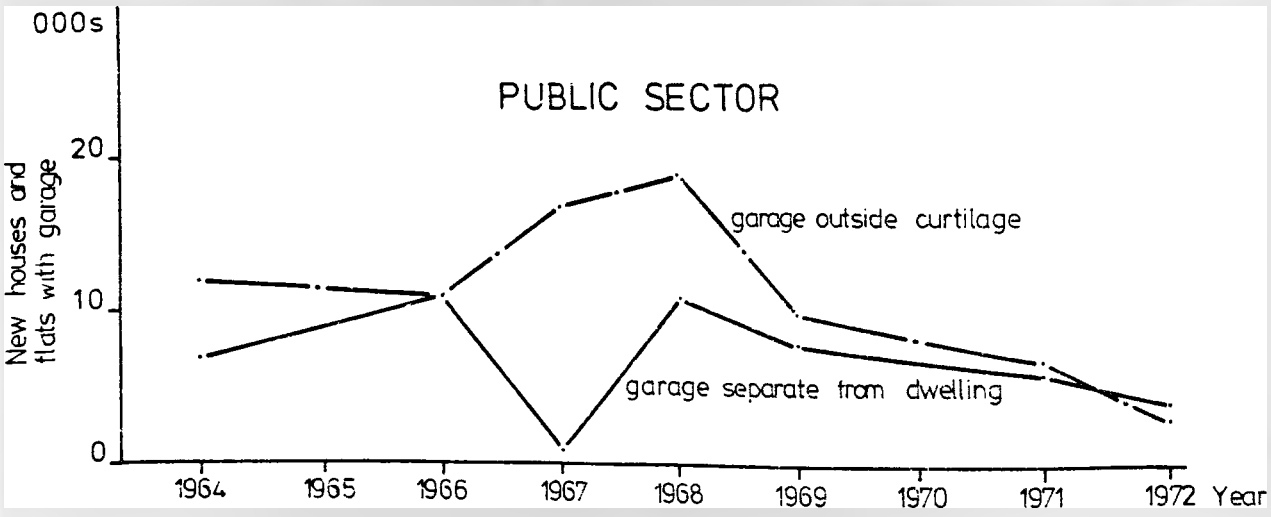


Fig. 8.13 NEW HOUSES AND FLATS CLASSIFIED BY THE TYPE OF GARAGE.



Garages separate from the dwelling were the most common type, followed by the adjoining to the house type of garage in the second place, and by the integral type in the third, while the number of garages outside the curtilage were gradually reduced, see Fig. (8.13).

7) Space standards 1970: England and Wales vis-a-vis Scotland:

The following findings have been extracted from a research study, carried out by the University of Heriot-Watt in 1969, known as the 'Sidwell Report'.[16]

a) House types distribution:

i) The Scottish sample had only half the percentage of terraced houses that the English had.

ii) The semi-detached house was clearly the most popular type in both Scotland and England, with the semi-detached bungalow being the least popular in both countries too.

iii) The detached house presented the first example of higher popularity in Scotland than in England, followed by the detached bungalow, see Fig. (8.14), overleaf.

b) House sizes distribution (by floor area):

i) The greatest percentage of both Scottish and English samples falls within the 800 - 899 sq.ft. range, although there was a 20% difference between two samples.

ii) In the Scottish sample there were no houses below 600 sq.ft. range, while there were twice as many Scottish houses than English over 1,400 sq.ft. in area, see Fig. (8.15).

iii) The average area of the houses in the Scottish sample was 940 sq.ft. against the 905 sq.ft. in the English sample.

These findings confirm the generally held view that

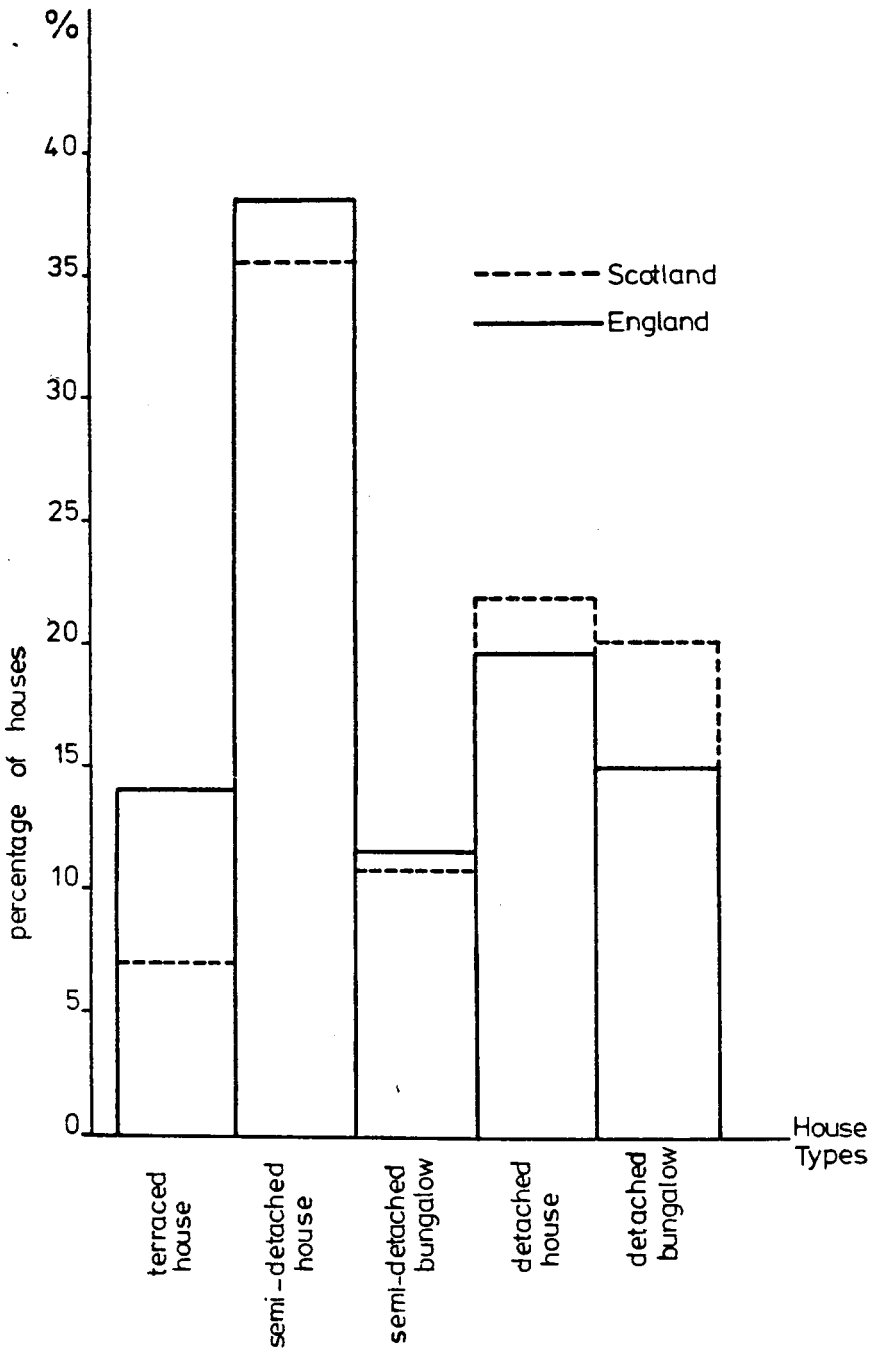


Fig. 8.14 PERCENTAGE HOUSE TYPES' DISTRIBUTION 1970 PRIVATE SECTOR

Source: The Sidwell Report, Appendix B, page 58.

Scottish homes are inclined to be of greater area on average owing to the more stringent Building Regulations with regard to space standards: Parts Q5, pp.106, "Building Standards (Scotland) (Consolidation) Regulations 1971", No. 2052, (S218).

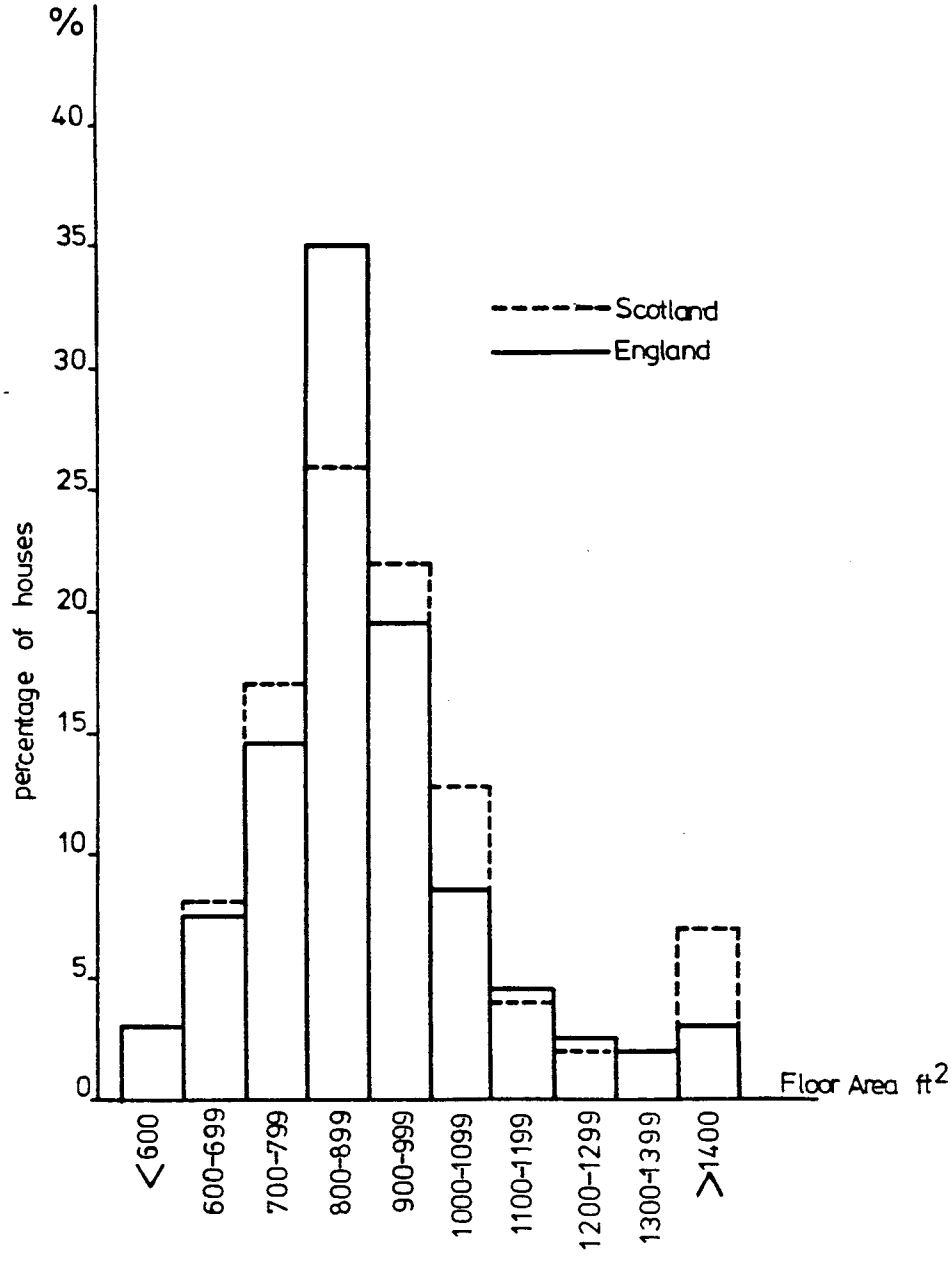


Fig. 8.15 PERCENTAGE HOUSE SIZES' (by floor area) DISTRIBUTION 1970. PRIVATE SECTOR.

Sourse: The "Sidwell Report", Appendix B, page 59.

Section 8.3.1: Comparative Texts of Statutory Housing Standards of Both Public and Private Sectors.

Extracts from: 1. D.O.E. Circular 27/70, Appendix IV, pp.8-12, (PUBLIC SECTOR).

2. N.H.B.C. Handbook 1974. "Schedule of Facilities and Services", (PRIVATE SECTOR).

Note: The majority of the 'PRIVATE SECTOR' clauses are not applicable in Scotland because the matters are covered by Scottish statutory requirements, which are different from the English ones.

N.S. - not applicable in Scotland.
N.E. - not applicable in England/Wales.

public sector

A. PLAN ARRANGEMENT Mandatory as from 1st January 1969.

(1) A dwelling shall have (i) an entrance hall or lobby with space for hanging outdoor clothes and (ii) for 3-person and larger houses and 3-person and larger dwellings served by a lift or ramp a space for a pram (1,400 x 700 mm).

(2) Except in 1 or 2-person dwellings access from bedroom to the bathroom and a W.C. shall be arranged without having to pass through another room.

(3) The kitchen in a dwelling for 2 or more persons must provide a space where casual meals may be taken by a minimum of 2 persons - see also E.1.

private sector

No direct equivalent.

public sector

A. PLAN ARRANGEMENT (Cont'd.)

(4) In addition to kitchen storage, the sink and space for a cooker, a minimum of two further spaces shall be provided in convenient positions to accommodate a refrigerator and a washing machine. The latter may be in the kitchen or in a convenient position elsewhere. These spaces may be provided under work-top surfaces.

(5) Most house layouts now provide for public access to both sides of the house, but where public access to a house of 3 or more persons is from one side only, a way through the house from front to back shall be provided and this must not be through the living room. In such cases the dustbin compartment shall be on the front.

private sector

No direct equivalent.

public sector

A. PLAN ARRANGEMENT (Cont'd.)

(6) Access to dwellings shall not involve a climb through more than two storeys to the front entrance doors.

Building Regulations 1976, S.I. 1976, No. 1676. Regulation P3(3) relates to circular 27/70, Appendix clause A(2).

Also D.O.E. Design Bulletin 13: "Safety in the home".

private sector

No direct equivalent.

public sector

B. SPACE Standards: Mandatory as from 1st January, 1969.

N=net space (Note 1) S=general storage space (Note 2)		Number of people (i.e. bed-spaces) per dwelling						
		1	2	3	4	5	6	7
		m²	m²	m²	m²	m²	m²	m²
HOUSES								
1 storey	N	30	44·5	57	67	75·5	84	
	S	3	4	4	4·5	4·5	4·5	
2 storey (semi or end)	N				72	82	92·5	108
	S				4·5	4·5	4·5	6·5
(intermediate terrace)	N				74·5	85	92·5	108
	S				4·5	4·5	4·5	6·5
3 storey (excluding garage if built-in)	N					94	98	112
	S					4·5	4·5	6·5
FLATS	N	30	44·5	57	70*	79	86·5	
	S	2·5	3	3	3·5	3·5	3·5	
MAISONETTES	N				72	82	92·5	108
	S				3·5	3·5	3·5	3·5

*(67 if balcony access)

Tolerance: Where dwellings are designed on a planning grid and not otherwise, a maximum minus tolerance of 1½% shall be permitted on the net space.

private sector

No direct equivalent

public sector

B. SPACE (Cont'd.)

Note 1: NET SPACE is the area on one or more floors enclosed by the walls of a dwelling measured to the inner boundaries of the zones for the main containing walls, usually external and separting walls on each floor of the dwellings. This applies also where the wall construction does not completely fill the zone. Any site applied finishes outside the zone shall not exceed the zone by more than 25 mm. It includes the space, on plan, taken up on each floor by any staircase, by partitions and by any chimney breast, flue and heating appliance and the area of any external W.C. It excludes the floor area of general storage space (S in table) and dustbin store, fuel store, garage or balcony and any area in rooms with sloping ceilings to the extent that the height of the ceiling

private sector

S1 MEASUREMENT OF FLOOR AREAS

Where in this Schedule reference is made to floor area, it shall be calculated as follows:

'The area of one or more floors enclosed by the walls of the dwelling measured to unfinished surfaces. It shall include the space on plan taken up on each floor by any staircase, by partitions and by any chimney breast, flue and heating appliance and the area of any external W.C. It shall exclude the floor area of dustbin store, fuel store, garage or balcony and any area in rooms with sloping ceilings to the extent that the height of the ceiling does not exceed 1.5m and any porch, lobby or covered way open to the air.'

public sector

B. SPACE (Cont'd.)

does not exceed 1.5m and any porch, lobby or covered way open to the air.

In the case of a "single access house", any space within a store required to serve as access (taken as 700 mm wide) from one side of a house to the other shall be provided in addition to the areas in the table.

private sector

S1. MEASUREMENT OF FLOOR AREAS

public sector

B. SPACE (Cont'd.)

Note 2: GENERAL STORAGE SPACE is the space which shall be provided exclusive of any dustbin store, fuel store, pram space located in a store and, in the case of a "single access house", any space within a store required to serve as access (taken as 700 mm wide) from one side of a house to the other.

For houses - some of the storage space may be on an upper floor but at least 2.5m^2 shall be at ground level;

- where some of the storage space is provided on an upper floor, it shall be enclosed separately from linen or bedroom cupboards; it shall be accessible from the circulation space or from a room if conveniently accessible in relation to furnishing;

private sector

S3. STORAGE ACCOMMODATION

(a) IN EVERY DWELLING, ENCLOSED DOMESTIC STORAGE ACCOMMODATION SHALL BE PROVIDED AS FOLLOWS:

Area of dwelling (m^2)	Minimum volume of storage (m^3)
Less than 60	1.3
60 - 80	1.7
Over 80	2.3

(b) At least half the above volume shall be in the kitchen. The remainder shall be easily accessible to the kitchen.

(c) Part of the storage accommodation shall be suitable for brooms and similar equipment. N.S.

public sector

B. SPACE (Cont'd.)

- where there is a garage integral with or adjoining a house, any area in excess of 12.0m^2 shall count towards the general storage provision.

For flats and maisonettes - not more than 1.5m^2 may be provided outside the dwelling and any area in excess of 12.0m^2 which is provided in a garage integral with or adjoining the dwelling shall count towards this 1.5m^2.

private sector

S3. STORAGE ACCOMMODATION

public sector

B. SPACE (Cont'd.)

FUEL STORAGE (excluded from the table) where required, shall be a minimum of:-

for houses	1.5m^2 where there is only one appliance, 2.0m^2 where there are two appliances or in rural areas,
for flats and maisonettes	1.0m^2 if there is no auxiliary storage.

private sector

No direct equivalent.

public sector

C. FITTINGS AND EQUIPMENT The standard at (1)(c) will be mandatory as from 1st January, 1969. The date on which the other standards in this section might become mandatory has not yet been fixed.

(1) The W.C. and wash-basin provision shall be as set out below:

(a) In 1-, 2- and 3-person dwellings, 1 W.C. is required, and may be in the bathroom.

(b) In 4-person 2- or 3-storey houses and 2-level maisonettes, and in 4- and 5-person flats and single-storey houses, 1 W.C. is required in a separate compartment.

(c) In 2- or 3-storey houses and 2-level maisonettes at or above the minimum floor area for 5 persons, and in flats and single-storey houses at or above the minimum floor area for 6 persons, 2 W.Cs. are required, one of which may be in the bathroom.

private sector

S7. SANITARY FITTINGS

(a) EVERY DWELLING SHALL BE EQUIPPED WITH AT LEAST ONE SINK, ONE BATH, ONE WASH BASIN AND ONE W.C.

(b) ANY COMPARTMENT, INCLUDING AN EXTERNAL COMPARTMENT, CONTAINING A W.C. SHALL ALSO CONTAIN A WASHBASIN unless the compartment immediately adjoins a bathroom containing a washbasin.

(c) WHERE A DWELLING IS EQUIPPED WITH ONLY ONE W.C. THAT W.C. SHALL BE IN A SEPARATE COMPARTMENT unless the floor area of the dwelling is less than the following:

No. of storeys in dwelling	Floor area (m^2)
2 or more	80
1	75

(see also Services Specification) N.S.

public sector

C. FITTINGS AND EQUIPMENT (Cont'd.)

(d) Where a separate W.C. does not adjoin a bathroom, it must contain a washbasin.

Also D.O.E. Design Bulletin 24, Part 1, "Spaces in the home".

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private sector

S7. SANITARY FITTINGS

public sector

C. FITTINGS AND EQUIPMENT (Cont'd.)

No direct equivalent.

Also covered by D.O.E. Design Bulletin 30 and Water Board Byelaws.

private sector

S8. WATER SERVICES

(a) EVERY DWELLING SHALL BE EQUIPPED WITH A COLD AND A HOT WATER SERVICE.

(b) A DRINKING POINT SHALL BE PROVIDED OFF THE INCOMING MAIN IN THE KITCHEN.

(c) The cold water system may be either a storage or a mains pressure type.

(d) In the case of a conventional storage system, the actual volume shall, unless prohibited by the local water undertaking, be not less than:

115 litres if for cold storage only, or 230 litres if for cold storage and hot feed.

public sector

C. FITTINGS AND EQUIPMENT (Cont'd.)

No direct equivalent.

private sector

S8. WATER SERVICES (Cont'd.)

(e) The hot water system may be of either a storage or an instantaneous type.

(f) In the case of the storage system, the temperature at the outlet of the storage cylinder shall be not less than 60 deg C under normal operating conditions.

(g) Hot water storage capacity in a conventional system shall be not less than 115 litres.

(h) The full volume of the cylinders shall recover the temperature of 60 deg C as follows:

Fuel	Recovery time (hours)
Continuous burning solid fuel	3
All others	2

public sector

C. FITTINGS AND EQUIPMENT (Cont'd.)

No direct equivalent.

private sector

S8. WATER SERVICES (Cont'd.)

(i) Boilers shall have an output of at least 3kW available for domestic hot water.

(j) OUTLETS SHALL BE OF NOT LESS THAN THE FOLLOWING SIZES:

Fitting	Outlet diameter (mm)	
	Cold	Hot
Sink	13	13
Bath	20	20
Washbasin in internal compartment	13	13
Washbasin in external compartment	13	Not mandatory
W.C.	13	Not mandatory
Shower	Shall have a water supply of adequate pressure	

public sector

C. FITTINGS AND EQUIPMENT (Cont'd.)

No direct equivalent.

private sector

S8. WATER SERVICES (Cont'd.)

(k) The following shall be surrounded in insulation: Cisterns located in roof voids; hot water cylinders; pipes located in roofs and hollow ground floor voids; underground pipes where ground cover is less than 750 mm.

(See also Services Specification).

public sector

C. FITTINGS AND EQUIPMENT (Cont'd.)

(2) Linen storage

A cupboard shall be provided giving 0.6m^3 of clear storage space in 4-person and larger dwellings or 0.4m^3 in smaller dwellings.

private sector

S6. AIRING CUPBOARDS N.S.

(a) EVERY DWELLING SHALL BE PROVIDED WITH AN AIRING CUPBOARD.

(b) An airing cupboard shall contain not less than 0.5m^2 of shelving.

(c) Shelf spaces shall not be less than 500 mm high.

(d) An airing cupboard shall contain either the hot water storage cylinder or an equivalent source of heat.

public sector

C. FITTINGS AND EQUIPMENT (Cont'd.)

(3) Kitchen fitments

Kitchen fitments comprising enclosed storage space in connection with:

(a) preparation and serving of food and washing-up;

(b) cleaning, and laundry operations and

(c) food,

shall be provided as follows:-

3-person and larger dwellings	$2.3m^3$
1- and 2-person dwellings	$1.7m^3$

Part of this provision shall comprise a ventilated "cool" cupboard and a broom cupboard. The broom cupboard may be provided elsewhere than in the kitchen.

---

private sector

S2. KITCHEN PLANNING

Every kitchen shall be so planned and equipped as to satisfy the following criteria:

(a) A SINK AND AT LEAST ONE DRAINER SHALL BE PROVIDED, THE WHOLE BEING NOT LESS THAN 1.0m LONG.

(b) THE DRAINER SHALL HAVE A MINIMIM AREA OF $0.28m^2$. N.E.

(c) The drainer shall not overlap a return.

(d) A COOKER ENERGY OUTLET SHALL BE PROVIDED.

(e) UNLESS A COOKER IS PROVIDED BY THE BUILDER, A COOKER SPACE SHALL BE PROVIDED AS FOLLOWS:

public sector

C. FITTINGS AND EQUIPMENT (Cont'd.)

Where standard fitments are used the cubic capacity shall be measured overall for the depth and width, and from the underside of the work-top to the top of the plinth for the height.

Worktops shall be provided on both sides of the sink and on both sides of the cooker position. Kitchen fitments shall be arranged to provide a work sequence comprising work-top/cooker/work-top/sink/work-top (or the same in reverse order) unbroken by a door or other traffic way.

Also D.O.E. Design Bulletin 24, Part 2, "Spaces in the home".

private sector

S2. KITCHEN PLANNING (Cont'd.)

Area of dwelling (m^2)	Minimum length of cooker space (mm)
up to 80	510
Over 80	600

The cooker space shall not be located beneath a window.

(f) There shall be a clear space of at least 100 mm between the cooker space and any return.

(g) At a return, the sink and the cooker space shall be separated by at least 500 mm.

(h) WORK SURFACE SPACES, MEASURING NOT LESS THAN 500 mm FROM FRONT TO BACK, SHALL BE PROVIDED ON EACH SIDE OF THE SINK AND ON EACH SIDE OF THE COOKER (One work surface space may be common; the drainer may count as a work surface space).

public sector

C. FITTINGS AND EQUIPMENT (Cont'd.)

private sector

S2. KITCHEN PLANNING (Cont'd.)

(i) The total work surface space shall not be less than 1.5m long including the drainer.

(j) No work surface space shall be less than 300 mm long.

(k) AT LEAST TWO APPLIANCE SPACES SHALL BE PROVIDED, one being not less than 800 mm long and the other not less than 600 mm long.
(Appliance spaces may be provided in alternative suitable locations e.g. space for a washing machine in a utility room.)

(l) THERE SHALL BE A CLEAR SPACE OF AT LEAST 1.0m IN FRONT OF ALL FITTINGS AND SPACES REQUIRED UNDER (a) to (k) above.

public sector

C. FITTINGS AND EQUIPMENT (Cont'd.)

No direct equivalent.

private sector

S12. ELECTRICITY SERVICE

(a) EVERY DWELLING SHALL BE PROVIDED WITH AN ELECTRICITY SERVICE WITH OUTLETS AS INDICATED IN (b) and (c) BELOW. N.S.

(b) Every room shall be provided with not less than one lighting outlet. N.S.

(c) 13A socket outlets shall be provided as indicated in the table to this clause, (see page 233). N.S.

(d) All socket outlets shall be well separated. N.S.

(e) There shall be adequate provision for lighting to halls, landings and staircases and two-way switching shall be provided to staircases. N.S.

public sector

C. FITTINGS AND EQUIPMENT (Cont'd.)

private sector

S12. ELECTRICITY SERVICE (Cont'd.)

(f) Unless the area of the dwelling is less than $60m^2$, at least two final sub-circuits for lighting shall be provided. N.S.

(g) Where a cooker control panel is provided it shall be located to the side of the cooker position.

(h) Final sub-circuits for cookers shall be not less than 30A rating.

(i) SOCKET OUTLETS ON WALLS SHALL BE AT LEAST 150 mm ABOVE FLOOR OR WORK SURFACE LEVEL AS APPROPRIATE (Measured to bottom of socket plate).

(j) Immersion heaters, where provided, shall have a switch with the on/off position clearly indicated.

public sector

C. FITTINGS AND EQUIPMENT (Cont'd.)

private sector

S12. ELECTRICITY SERVICE (Cont'd.)

(k) PROVISION SHALL BE MADE FOR THE INSTALLATION OF TELEVISION IN THE MAIN LIVING ROOM. A conduit and draw wire shall be provided from the roof to the outlet or alternative provision shall be made.

(See also Services Specification)

public sector

C. FITTINGS AND EQUIPMENT (Cont'd.)

(4) Electric socket outlets shall be provided as follows:-

Working area of kitchen	4
Dining area	1
Living area	3
Bedroom	2
Hall or landing	1
Bedsitting-room in family dwellings	3
" " " 1-person dwellings	5
Integral or attached garage	1
Walk-in general store (in house only)	1

private sector

TABLE TO S12(c)

Room	Outlets	Notes
Kitchen	4	Two may be in dual unit. One may be in cooker control unit. A maximum of one outlet may be conceded if the builder provides a wired-in appliance.
Dining Room	2	May be in a dual outlet.
Living Room	3	Two may be in a dual unit. One shall be near the television outlet.

public sector

C. FITTINGS AND EQUIPMENT (Cont'd.)

private sector

TABLE TO S12(c) (Cont'd.)

Room	Outlets	Notes
Living/dining room with distinctive areas	5	Four may be in dual units.
Each bedroom	2	May be in dual unit in third and subsequent bedrooms if floor area is less than 7.5m^2.
Spare or box room	1	
Nursery	1	
Landing	1	
Study	1	

public sector

C. FITTINGS AND EQUIPMENT (Cont'd.)

private sector

TABLE TO S12(c) (Cont'd.)

Room	Outlets	Notes
Landing	1	
Hall	1	'Hall' shall mean 'any space giving access to two or more rooms' and, except in single-storey dwellings, the staircase.

public sector

D. SPACE HEATING Mandatory as from 1st January 1969.

The minimum standard shall be an installation with appliances capable of maintaining kitchen and the circulation spaces at 13°C, and the living and dining areas at 18°C, when the outside temperature is -1°C.

private sector

S9. HEATING TO MAIN LIVING ROOM

In non-centrally heated dwellings, the main living room shall be equipped with a fixed appliance capable of producing heat at a rate of at least 42 W/m^3 and which shall in no case have a capacity less than 2kW. N.S.

S10. CENTRAL HEATING

The provision of heating in addition to that required under S9. above shall be at the option of the builder.

Where central heating is to be provided, the purchaser shall be advised which of the following standards is to be provided. In no case shall the heating to the main living room be below the standard required under S9. above.

public sector

D. SPACE HEATING (Cont'd.)

private sector

S10. CENTRAL HEATING (Cont'd.)

(a) Whole House Heating - Grade 1

The system shall be designed to achieve not less than the internal temperatures given in the table below when the external temperature is -1 deg.C. and where two air changes per hour are assumed.

Room	Air temperature (deg.C.)
Living Room	21
Dining Room	21
Kitchen	18
Hall and landing	16
Bedrooms	16
Bathroom	21
W.C.	16

public sector

D. SPACE HEATING (Cont'd.)

private sector

S10. CENTRAL HEATING (Cont'd.)

(b) Whole House Heating - Grade 2

The system shall be designed to achieve not less than the internal temperatures given in the table below when the external temperature is -1 deg.C. and where two air changes per hour are assumed.

Room	Air temperature (deg.C.)
Living Room	17
Dining Room	17
Kitchen	13
Hall and landing	10
Bedrooms	10
*Bathroom	10
*W.C.	10

public sector

D. SPACE HEATING (Cont'd.)

private sector

S10. CENTRAL HEATING (Cont'd.)

*Where Grade 2 applies, these compartments may be deemed to be heated by infiltration.

(c) Background Heating - Grade 3

Where the builder is to provide heating standards lower than either of the above standards for whole heating, he shall advise the purchaser which rooms are to be heated and to what standard. In no case shall the standard be lower than the temperatures below when the external temperature is -1 deg.C.

Room	Air temperature (deg.C.)
Living Room	13
Dining Room	13
All others	10

(See also Services Specification.)

public sector

D. SPACE HEATING (Cont'd.)

No direct equivalent.

private sector

S11. GAS SERVICE

The provision of a gas service shall be at the option of the builder.

(See also Services Specification.)

public sector

E. FURNITURE Mandatory as from 1st January 1969.

All dwelling plans must show the furniture drawn on and should be designed to accommodate furniture as set out below:-

(1) Kitchen — A small table unless one is built in.

(2) Meals space - Dining table and chairs.

(3) Living space - 2 or 3 easy chairs
A settee
A T.V. set
Small tables
Reasonable quantity of other possessions, such as:
radiogram
bookcase.

private sector

No direct equivalent except as S4. Bedrooms, overleaf.

public sector

E. FURNITURE (Cont'd.)

(4) Single Bedrooms

Bed or divan (2000 x 900 mm).
Bedside table.
Chest of drawers.
A wardrobe or space for cupboard to be built in.

(5) Main bedrooms

A double bed (2000 x 1500 mm) - and where possible 2 single beds* (2000 x 900 mm) as an alternative.
Bedside tables.
Chest of drawers.
Double wardrobe or space for cupboard to be built in.
Dressing table.

*Where single beds are shown they may abut or where alongside walls must have a space of 750 mm between them.

private sector

S4. BEDROOMS

(a) Any room described as a bedroom shall have an adequate bed space, which shall be not less than 2.0m long and sufficiently wide to accommodate a single bed conveniently. N.S.

(b) In any bedroom, the bed space shall not overlap or otherwise restrict the use of any wardrobe cupboard provided by the builder. N.S.

public sector

E. FURNITURE (Cont'd,)

(6) Other double bedrooms

Two single beds (2000 x 900 mm each).
Bedside tables.
Chest of drawers.
Double wardrobe or space for cupboard to be built in.*
Small dressing table.

*May be provided within easy access outside the room.

Note: Spaces for wardrobes, or space for cupboards to be built in later should be on the basis of 600 mm run for hanging space per person. The space provided for a cupboard depth should be not less than 550 mm internally.

private sector

No direct equivalent.

S5. WARDROBE CUPBOARDS - OPTIONAL

Where a wardrobe cupboard is provided, it shall:

(a) be of sufficient size measured either from front to back or from side to side to accommodate clothing on hangers;

(b) contain an adequately supported hanging rail.

public sector

F. PLAY SPACE The date on which this might become mandatory has not yet been fixed.

Play space must be provided on schemes of 200 persons per hectare and above on the basis of 1.5 - 2.0m^2 per bedspace, with a minimum of 1.0m^2 in exceptionally favourable circumstances, such as where an estate has existing playgrounds readily accessible in the immediate vicinity.

Also D.O.E. Design Bulletin 27 "Children at Play".

private sector

No direct equivalent.

public sector

No direct equivalent.

Building Regulations 1976 No. 1676:

Part G, Sound Insulation relates to refuse chutes and separating walls/party walls only.
Table to Regulation F3 Max. 'U' values.

private sector

S13 SOUND INSULATION

(a) ANY PARTITION BETWEEN A COMPARTMENT CONTAINING A W.C. AND A LIVING ROOM, DINING ROOM, STUDY OR BEDROOM SHALL HAVE AN AVERAGE SOUND REDUCTION INDEX OF NOT LESS THAN 35 dB OVER THE FREQUENCY RANGE 100-3150Hz WHEN TESTED IN ACCORDANCE WITH BS 2750.

(b) ANY SOIL PIPE PASSING THROUGH A LIVING ROOM OR BEDROOM SHALL BE ENCASED AND INSULATED SO AS TO MINIMISE SOUND NUISANCE (see Practice Note 7).

(c) In the Inner London area, separating (party) walls and floors shall be constructed so as to achieve at least the degree of reduction to the passage of airborne sound mandatory elsewhere in England/Wales under Building Regulations.

public sector

No direct equivalent.

private sector

S14. THERMAL INSULATION OF ROOFS

IN EVERY DWELLING, ROOFS OVER HABITABLE AREAS SHALL BE DESIGNED SO AS TO GIVE A 'U' VALUE OF NOT MORE THAN 0.6 W/m^2 deg.C. where the sum of the surface resistances of the top of the roof and the underside of the ceiling is 0.15.

public sector

No direct equivalent.

B.R.E., I.S. 26/76
Inspection and maintenance of flat and low pitched timber roofs.

private sector

S15. ACCESS TO LOFTS

(a) EVERY ROOF VOID SHALL BE PROVIDED WITH AN ACCESS DOOR.

(b) Access openings shall be not less than 550 mm wide in any direction.

(c) Access openings shall not be located directly over the stairs or in other hazardous locations.

(d) GANGWAY BOARDING SHALL BE PROVIDED FROM THE ACCESS OPENING TO EACH CISTERN.

(e) At least $1m^2$ of boarding shall be provided around each cistern.

public sector

No direct equivalent.

private sector

S16. DOORS

(a) Letter plates shall be so located that locks cannot be reached.

(b) All external doors shall be capable of being secured from both the inside and outside against entry from without.

(c) No rise to an external door, including the threshold, shall be more than 200 mm and no going shall be less than 225 mm.

(d) Doors to bathrooms and W.C.s shall be capable of being secured from the inside and locks shall be of a type capable of being opened from the outside in an emergency.

(See Joinery Specification.)

public sector

No direct equivalent.

private sector

S17. EXTERNAL ACCESS

(a) IF THERE IS A GARAGE, CARPORT OR PAVED STANDING AREA WITHIN THE CURTILAGE OF THE DWELLING, A DRIVE SHALL BE PROVIDED THERETO FROM THE HIGHWAY.

(b) The gradient of any drive shall be such as to permit an average family saloon motorcar to obtain unimpeded access to the garage, carport or paved standing area.

(c) PATHS SHALL BE PROVIDED FROM THE HIGHWAY TO THE MAIN ENTRANCE OF EVERY DWELLING AND, EXCEPT IN THE CASE OF MID-TERRACE DWELLINGS, THE KITCHEN ENTRANCE.

public sector

No direct equivalent.

private sector

S17. EXTERNAL ACCESS (Cont'd.)

(d) IF A GARAGE, CARPORT OR PAVED STANDING AREA IS PROVIDED WITHIN THE CURTILAGE OF ANY DWELLING, A PATH SHALL BE PROVIDED THERETO FROM THE DWELLING.

(e) The minimum width of any path required under (c) or (d) above shall be 600 mm, unless it adjoins a building in which case the minimum width shall be 700 mm. N.S.

(f) Where the overall gradient of any path required under (c) or (d) above exceed 1:6, steps shall be incorporated so that no part slopes at a gradient of more than 1:6. N.S.

(g) Steps required under (f) above shall have an appropriate and consistent rise and going. N.S.

public sector

No direct equivalent.

private sector

S17. EXTERNAL ACCESS (Cont'd.)

(h) Where the construction of retaining walls results in any part of the garden area being rendered inaccessible, then steps or other suitable means of access shall be provided. N.S.

(i) Where the total rise in any flight of steps required under (f) or (g) above exceeds 600 mm or where any path required under (c) or (d) above adjoins a vertical different in levels of more than 600 mm, a handrail or balustrade shall be provided. N.S.

public sector

No direct equivalent.

private sector

S18. AREA IMMEDIATELY SURROUNDING THE DWELLING

(a) WHERE WATERLOGGING MAY REASONABLY BE EXPECTED, SUITABLE PRECAUTIONS SHALL BE TAKEN TO PREVENT IT.

(b) Field drainage systems shall either connect to surface water drains or drain away in a suitable manner.

(c) On sloping sites, a flat area not less than 1.0m wide shall be provided around the dwelling to give free access.

(d) Ground or path level shall be at least 150 mm below dpc.

(e) Ground or paths adjoining the dwelling shall slope away to a slight fall.

(f) Soil shall be kept clear of airbricks and the like.

public sector

No direct equivalent.

private sector

S19. GARDEN AREA

(a) Old foundations, concrete bases and similar obstructions occurring within 500 mm of the ground surface shall be removed.

(b) Disturbed ground shall be re-shaped to conform with the general shape of adjacent ground.

(c) SUB-SOIL SHALL NOT BE LEFT ON TOP OF VEGETABLE SOIL.

(d) VEGETABLE SOIL DISTURBED SHALL BE REINSTATED OR REPLACED.

Note: The provision of further vegetable soil is not required.

(e) Rubbish and debris shall be removed.

TABLE 8.1

SUBJECT HEADING CROSS REFERENCE.

M.H.L.G. Circular 36/67 as metricated by Appendix IV of the D.O.E Circular 27/70 based on the minimum standards in the Parker Morris Report "Homes for Today and Tomorrow", 1961.	National House Building Council. Registered House-Builder's Handbook, 1974.	Building Regulations 1976, S.I. 1976, No. 1676, and D.O.E. Design Bulletins.
A. PLAN ARRANGEMENTS	No direct equivalent in NHBC but see also D.O.E. Section C(3) below on Kitchen Fittings and the corresponding section S2 of the NHBC standards.	Regulation P3(3) related to Circular 27/70, Appendix Clause A(2). See also C(1) below. D.O.E. Design Bulletin 13: "Safety in the Home".
B. SPACE Note 1. Net Space Note 2. General Storage Space Fuel Storage	No direct equivalent S1. Measurement of Floor areas S3. Storage Accommodation No equivalent	
C. FITTINGS & EQUIPMENT (1) WC and Washbasins No direct equivalent (2) Linen Store (3) Kitchen Fittings No direct equivalent (4) Electric Socket Outlets	 S7. Sanitary Fittings S8. Water Services S6. Airing Cupboards S2. Kitchen Planning S12. (c)	 D.O.E. Design Bulletin 24: Part 1 "Spaces in the Home". D.O.E. Design Bulletin 30. Water Board Byelaws. D.O.E. Design Bulletin 24: Part 2 "Spaces in the Home". Services for Housing

M.H.L.G. Circular 36/67 as metricated by Appendix IV of the D.O.E. Circular 27/70 based on the minimum standards in the Parker Morris Report "Homes for Today and Tomorrow", 1961.	National House Building Council. Registered House-Builder's Handbook, 1974.	Building Regulations 1976, S.I. 1976, No. 1676, and D.O.E. Design Bulletins,
(cont'd.) D. SPACE HEATING	S9. Heating to main living room S10. Central Heating (a) Whole House Heating Grade 1 (b) Whole House Heating Grade 2 (c) Background Heating Grade 3 S11. Gas Services (Optional)	
E. FURNITURE Note to Section E (Wardrobes)	No direct equivalent but see S4. Bedrooms S5. Wardrobe cupboards (optional)	D.O.E. Design Bulletin 6: "Space in the Home"
F. PLAY SPACE NO EQUIVALENT	No equivalent S13. Sound Insulation S14. Thermal insulation of roofs S15. Access to Lofts S16. Doors S17. External Access S18. Area immediately surrounding dwelling S19. Garden Area	D.O.E. Design Bulletin 27: "Children at Play" Part G: Sound Insulation related to refuse chutes & separating walls/party walls only. Table to Regulation F3 Maximum 'U' values. B.R.E. I.S. 26/76 Inspection and maintenance of flat and low-pitched timber roofs.

References:

1. N.H.B.C., "Notes on the N.H.B.R.C. Design Requirements, Kitchen Planning, W.C.s and Storage Space", RIBA Library.

2. H.M.S.O., "Homes for Today and Tomorrow", The Parker Morris Report, D.O.E., 1961, paragraph 44.

3. Mellish, Robert, "Housing Standards and Costs", his address, as joint parliamentary Secretary of M.H.L.G., to the London Regional Conference of the National Housing and Town Planning Council, 23rd May, 1967, duplicated typescript, D.O.E. Headquarters Library.

4. Greenwood, Anthony, written answers to Parliament on 20th July, 1967, about "Private Houses", discussion. Quoted in: "The New N.H.B.R.C. Requirements", August, 1967, N.H.B.R C., p.4.

5. Mellish, Robert, Op.Cit., D.O.E. typescript.

6. H.M.S.O., Op.Cit., p.19, paragraph 79.

7. H.M.S.O., Op.Cit., p.20, paragraph 80.

8. Hole, W.V., Attenburrow, J.J., "Houses and People", Ministry of Technology, B.R.S., H.M.S.O., p.52.

9. B.S.S., (Building Statistical Services), "Kitchens in New Homes", 1970, B.S.S. 14 Great College Street, London, SW1.

10. Hole, W.V., Attenburrow, J.J., Op.Cit., 51.

11. B.S.S., (Building Statistical Services), "Survey of Houses and Flats Completed in Great Britain", 1967, p.3, paragraph 1.1.

12. Ibid, 34, paragraph 10.1.

13. B.S.S., Op. cit, 51, paragraph 12.

14. B.S.S., Op. cit., 50 paragraph 11.

15. B.S.S., "Survey of Houses and Flats Completed in Great Britain", 1968, p.57, paragraph 14.

16. H.M.S.O., "The Cost of Private House Building in Scotland", The Sidwell Report, S.D.D., 1970, p.51.

CHAPTER 9: Housing Design Development

Section 9.1.1: The First Fifteen Postwar Years: 1945-1960

Due to the powerful market desire for individuality, the great mass of private housing in this country has been built at comparatively low densities.

With few exceptions, the 'picture' of the private estates of the first fifteen postwar years is one of "... mile upon mile of monotonous mediocrity. The houses themselves are almost invariably of a similar size, ... the designs of the houses themselves are usually dull and undistinguished if not downright bad."[1]

A lot of private sector housing of this period continued to be 'built' rather than 'designed'.

From the President of the Federation of House-Builders own words - Mr. D.B. Howard - one thing is clear; that more than a decade after the second world war, the design problem of the private sector house was still 'unsolved'. He said, ".... A good specification has been set up and many hundreds of builders are adhering to it and using certificates of compliance with the standard. That is a good step towards good construction. I know it does not ensure good design, but we are trying to upgrade the standard of our work, and I feel the next step is to get closer together with the architect, even if we are not going to have a complete wedding at the start...."[2]

According to Neil E. Wates, there was a tremendous national criticism of the design and finish of 'their' products to such an extent that the word 'development' had lost its original meaning and had almost become a term of abuse. "I think it is true to say that the house-builders have lost the confidence of the public and

when I look around I find this is sometimes justifiably so. Much building today (late fifties - author's addition) is inferior - design had not moved out of the thirties."[3]

Although architects, as Eric Lyons said: "... are united at least in their resentment of the despoliation of town and country; it seems very few architects are prepared to interest themselves seriously in the developer's problems.... I think that it is clearly our responsibility to see the need for change, not for mere architectural novelty, but because of the fast-changing social pattern. There is no 'market research' on this problem, so we must experiment and I think the speculative builder could provide the architect with the right kind of opportunities for this work...."[4]

A similar challenge to that of Eric Lyons to his own fellow architects, came this time from the Minister of Housing and Local Government, Henry Brooke, in 1959. Taking the chance of the opening of the millionth private enterprise house since the second world war the Minister said. ".... There is a deadly danger of being too easily content with what we have done and known, too unwilling to experiment and try out new ideas .... I would say, turn imagination and searching eyes on the interior planning, on the outside appearance and layout and landscaping,..... good living does not begin and end within four walls and a roof.... I want to see more developers, more architects, more builders take up the challenge of house design, using their knowledge of modern requirements and techniques...."[5]

Speaking about the qualities which people look for when buying a house, the Minister added: These are first, that it must be planned for modern living. "It must not be another dim repetition of outdated types, touched up with a bit of marzipan here and there."[5] Secondly it must be well designed, well proportioned, good looking and

along with its neighbours, attractively laid out. "I want us to get right away from the endless repetition of lines of semi-detached pairs that crawl parallel to a road like stiff red worms. Let us have development in depth, and make variety combine with harmony."[5] Thirdly, it must be well built. "Good design is no use without sound construction."[5]

Times kept changing all these fifteen years without any changes forthcoming in housing design. It was not until the early 1960's when the whole field of domestic architecture of both private and public sectors was in an early stage of a complete evolution.

"There is now (early sixties - author's addition) a real awakening among architects and builders to collaborate much more closely to design and build better. The modern builder.... is beginning to rely more and more on his architect to lead the design team, while he concentrates on the constructional problems. This changing pattern in relation to house design means that we are now beginning to plan our houses for today's living standards...."[6] Speaking about the house style Mr. J.L. Heap continued thus:

"Today's style is easily recognisable: large windows for uninterrupted views, made possible by great strides in space heating, lower pitched roofs, helping to make the proportions of houses more pleasing. The incorporation of the garage into the house helps to tidy up the elevations and enhance the proportions. Good expanses of plain brick-work or rendered panels emphasise the horizontal line and so make the house appear larger on the plot. The actual design of house for plot is also being noticeably considered - no longer is the basic plan considered suitable for any plot irrespective of the contours. Designs are now available that really do hug the ground, that happily sit on the natural contours."[6]

Mr. Ian Nairn 'puts' the same 'news of change' as follows: "Very slowly and no thanks to most of the speculative builders, design is improving. More trees are left, housing units are clearer and crisper, and - just occasionally - are grouped in patterns which may produce a sense of place. The proportion is still small, perhaps 10% but it cannot be ignored."[7]

According to Ian Nairn this slow but steady improvement in design is due to three factors: Firstly, the pioneer efforts of the architect Eric Lyons and his clients SPAN. Secondly,the slow change for better in public taste and thirdly,the devoted long-term work of planning offices all over the country in persuading committees to persuade builders to provide something better.

".... In fact the design of the units is slowly but steadily improving. Today about a third of all estates have units that are basically decent."[8]

As to the location of all these speculative housing estates being built till early sixties H.A.C. Dod answers the question thus:

"Undoubtedly the London Area and the Home Counties are the scene of the most intense private development. On the other hand there is virtually no private development undertaken in large areas of Scotland and Wales. These are the two extremes."[9]

With respect to the dwelling units themselves, new housing types, such as maisonettes and flats and terrace houses are now beginning to be sold while the developers and Building Societies prejudices alike have broken once and for all. As Mr. F. Lee of the Building Societies Association said: "Maisonettes were not popular with Building Societies immediately post-war. But in a space of ten years..... have come to be accepted."[10]

Similarly Paul Ritter wrote; "Developers have had their prejudice against flats broken. In places like Birmingham and Nottingham, these types of dwellings are now beginning to be sold; Row housing, called by cute names to get away from the stigma of 'terrace', is being built and sold in a number of forms."[11]

But the most important reasoning perhaps for the 'new' housing types such as flats and so on was economics. The rising cost of land put low density house development out of reach of all except the more affluent; and it was only then that terraces (town houses), flats and maisonettes became acceptable to both developers and public.

Section 9.2.1:The Development of the Main House-Types' Plans: 1945-1975

Economic pressure - high cost of space - and the changed social atmosphere of the post-war period, inevitably restricted the area of the house, and so much greater use had to be made of the reduced amount of space available; at the same time providing an air of spaciousness too. Firms admitted to having to persevere, until late fifties, in traditional design - the well known 'universal plan' - some of the houses being interesting, more because of an effective use of available space than because of noticeable variation in design.

The front entrance of the majority of the houses was by means of small porches, none of which had a second door before late fifties. The hall was gradually 'eliminated' and replaced in the small house by a lobby, having just enough room for a coat only, no place for the pram and so on, while the space it formerly occupied was thrown into the living room.

The second w.c. for the three or more bedroom house had its own influence on the planning too. It is located on the ground floor, always around the staircase/ entrance lobby/hall area of the house, with the first w.c. being in the bathroom on the first floor. Where only one w.c. was provided,it was usually separate from the bathroom ever since mid-fifties.

Dining and living areas combined, in the early forms of the 'open-plan' house, were stretching from the front to the rear, where optional french-windows opened to the back garden, giving an increased sense of spaciousness. The living-dining-kitchen areas were planned around a structural brick fireplace which contained the back boiler, cyliner for hot water and linen cupboards too.

Later, the living room was to combine the functions of sitting and dining with the kitchen open directly into it.

The kitchen itself became the 'showpiece'of the house - as a builder said: "after all it costs the most money per m^2 than any other room in the house."

Even during the immediate post-war period the kitchen was receiving gradually more and more attention, to make housework as easy as possible. It was located at the rear of the house, a few times to the front of the house and later on internally, lit and ventilated from a lightwell on the first floor. Indeed, the introduction - even though in a few schemes - of the centrally located light-well which provided both natural lighting and ventilation to the internally planned bathroom and kitchen was a major breakthrough in the private sector house-design.

With the advent of space-heating, the ground floor plan transformed to almost a completely flexible 'open-plan', with the fireplace - as much a concession to tradition as anything - located across the cross-wall of the dwelling.

Noticeable also is the emphasis in the design, generally, of the 'day-rooms' and the relatively higher proportion of total floor space devoted to these than to the bed-rooms. Indeed, the impression one gets from the house plans is that of spacious 'day-rooms' either for entertaining, furniture arrangements or provisions of ordinary daily living. Attention has also been given to the 'details' in planning as for example in the case of ensuring that a view up the stairs is not seen when opening the front door, or from the sitting room area later on, when the staircase became part of it; this was attained by various screening methods and/or by climbing the staircase off the dining area, instead of the sitting area.

By contrast to the local authority house planning where there is a greater uniformity in the allocation of space to day-rooms and bedrooms and a consistent attempt to provide for flexibility in the use of bedrooms, with kitchens in all cases having provision for dining and a satisfactory work sequence, although expensive fittings are absent.

According to the conclusions of Shankland Cox & Associates' Report[12]: "Most kitchens were too small for the equipment people needed. 'Glossable plan' types are needed in addition to the 'open plan' types and both types should be used together in the same scheme. While 'open plans' were liked by small households they were disliked by larger ones (e.g. the living-dining-kitchen combined area, was not popular with larger families). Storage space is insufficient or in the wrong place."[12]

Also as Andrew W. Tait - Director General of the N.H.B.C. said: ".... the one way in which they are not better is in size. I think the absence of adequate storage is a reasonable point of criticism of new houses. I would hope that size taken along with better insulation, are improvements we are going to see in the next decade."[13]

As to the selection of the plans following (Figs. 9.1 to 9.20), it is representing a 'cross-sectional view' of the post world-war-II houses and flats built; also intends to show the development of the dwellings' plan-arrangements as well as the types of dwellings that prevailed most during the 1945-1975 period.

Fig. 9.1 A SEMI-DETACHED HOUSE. 1945
First National Housing Trust Ltd. Arch: Ernest Willson

ground floor plan first floor plan 1:100

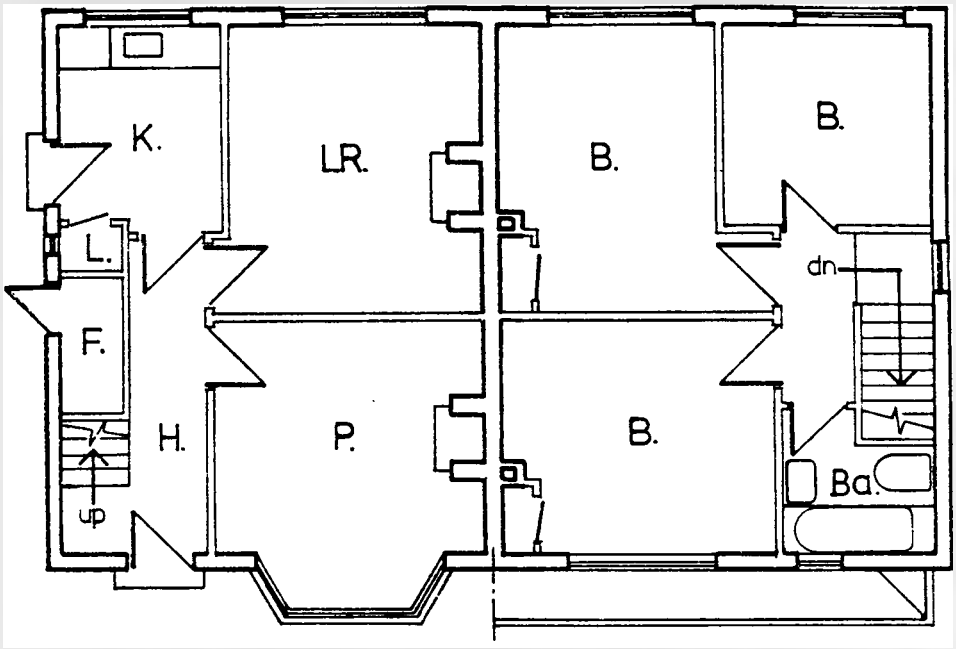


Fig. 9.2 A SEMI-DETACHED HOUSE WITH GARAGE 1953.
By the A.N. Alexander of Worcester Ltd. MIDLANDS.

ground floor plan first floor plan 1:100
(superficial area 900 ft^2 excluding garage and outbuildings)

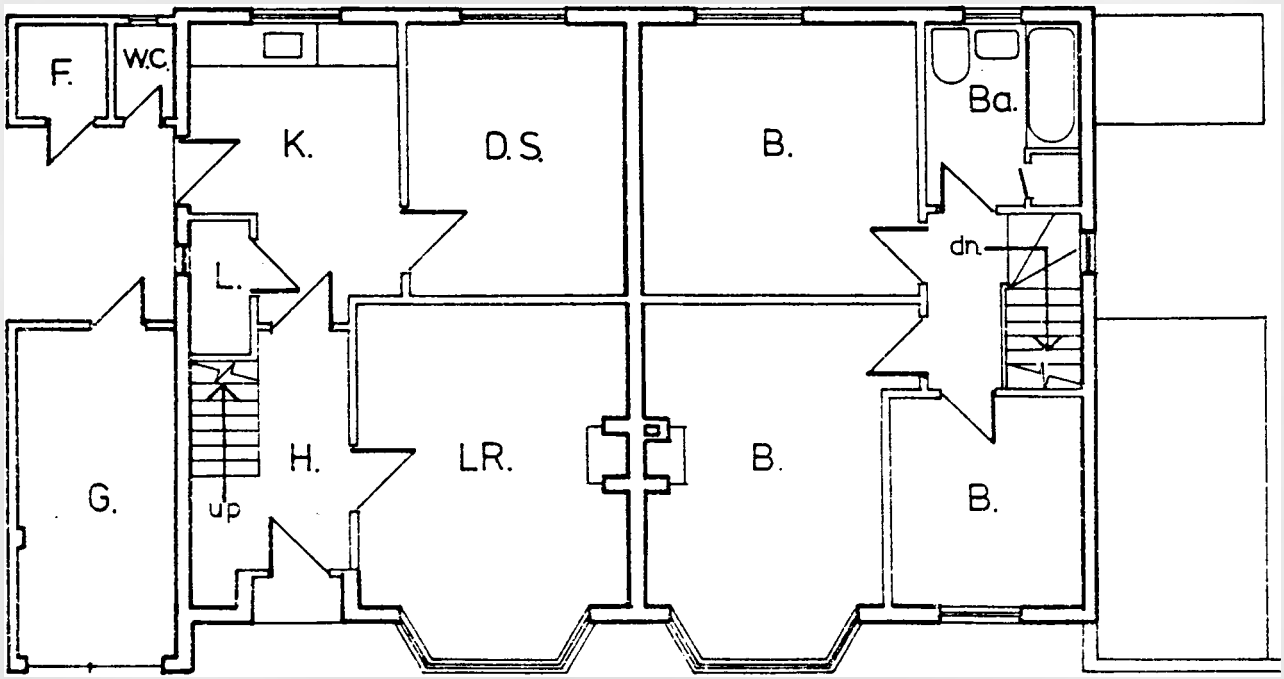


Fig. 9.3 A SEMI-DETACHED HOUSE WITH GARAGE SPACE 1953. MIDLANDS. By W. Whittingham Ltd., Wolverhampton.

ground floor plan 1:100 first floor plan
(superficial area 943 ft^2 excluding outbuildings)

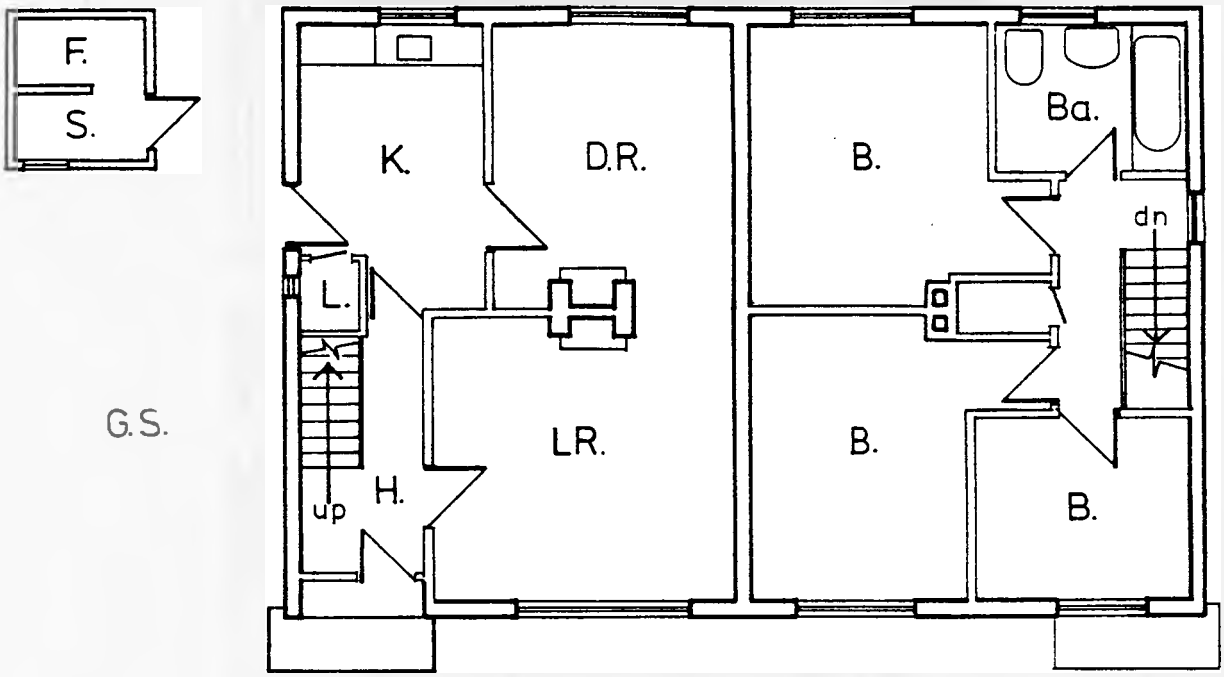


Fig. 9.4 A SEMI-DETACHED HOUSE WITH GARAGE. MIDLANDS 1953. By Birmingham Dwellings Ltd.

ground floor plan 1:100 first floor plan
(superficial area 987 ft^2 excluding garage and outbuildings)

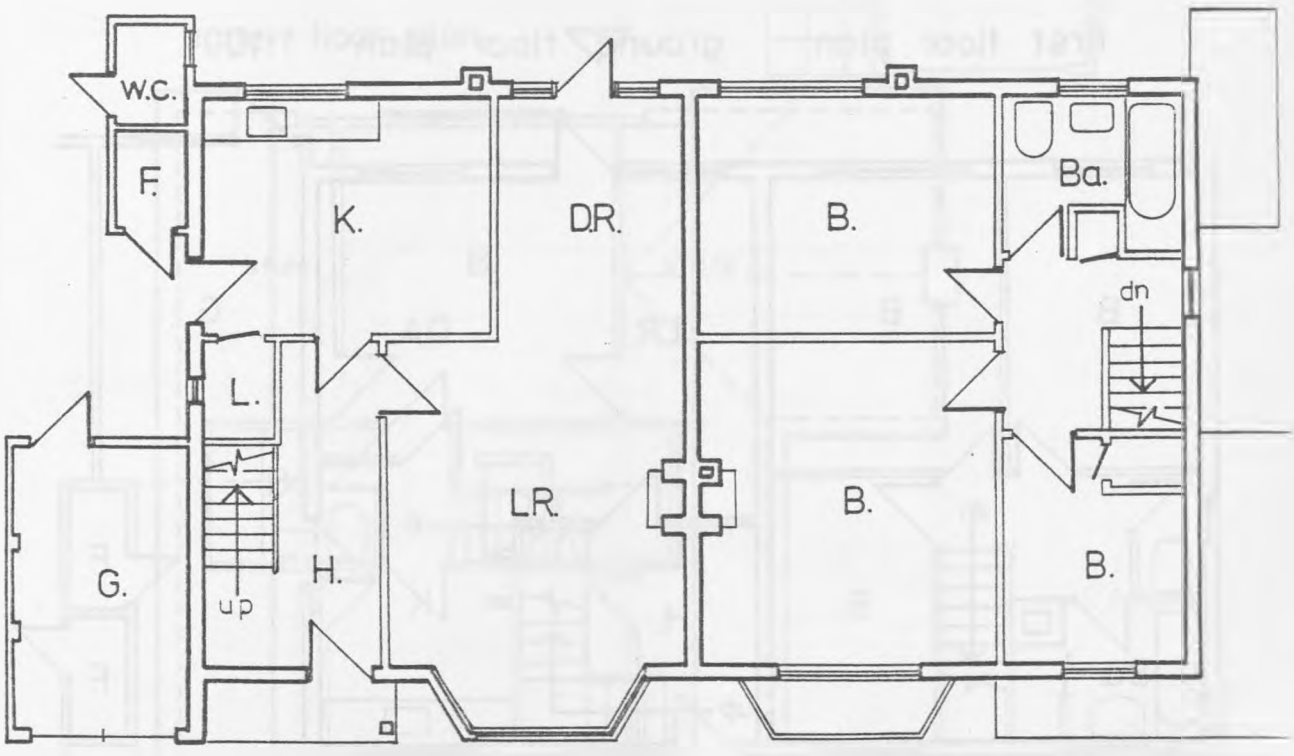


Fig. 9.5 HOUSING AT TWICKENHAM 1957. A TERRACE HOUSE. Arch: Alexander Gibson of the Design Research Unit.

ground floor plan first floor plan 1:100

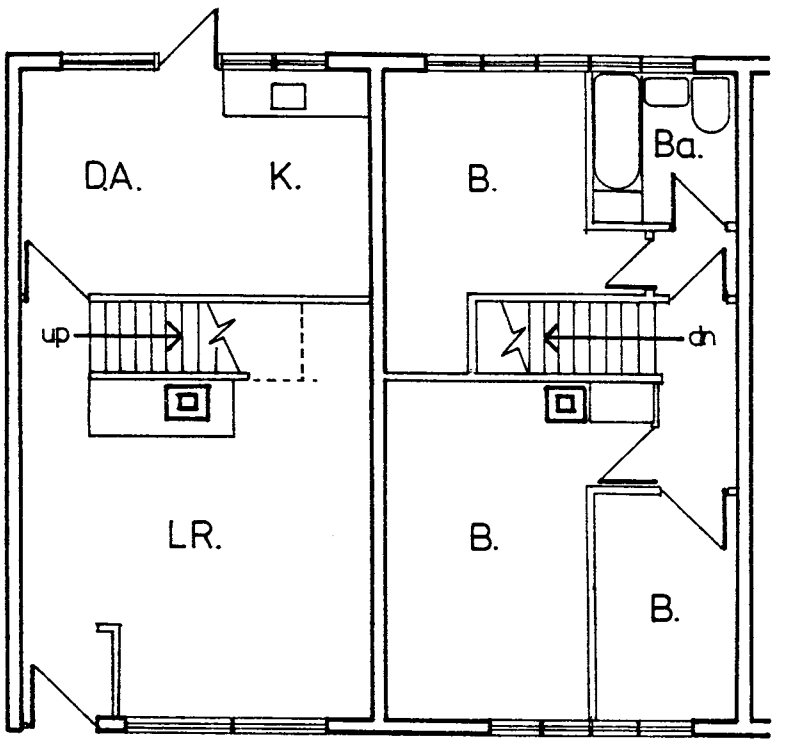


Fig. 9.6 HOUSING AT TWICKENHAM 1957. A SEMI-DETACHED HOUSE WITH GARAGE. Arch: Alexander Gibson.

first floor plan ground floor plan 1:100

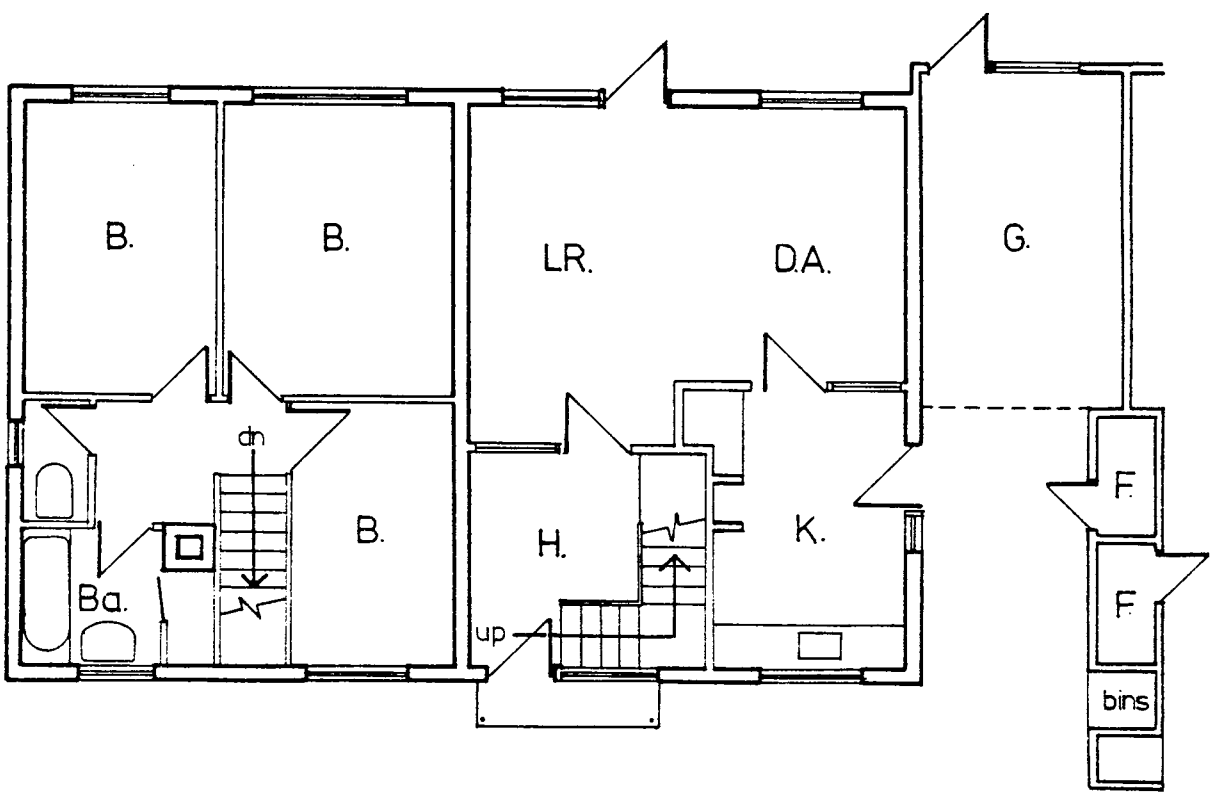
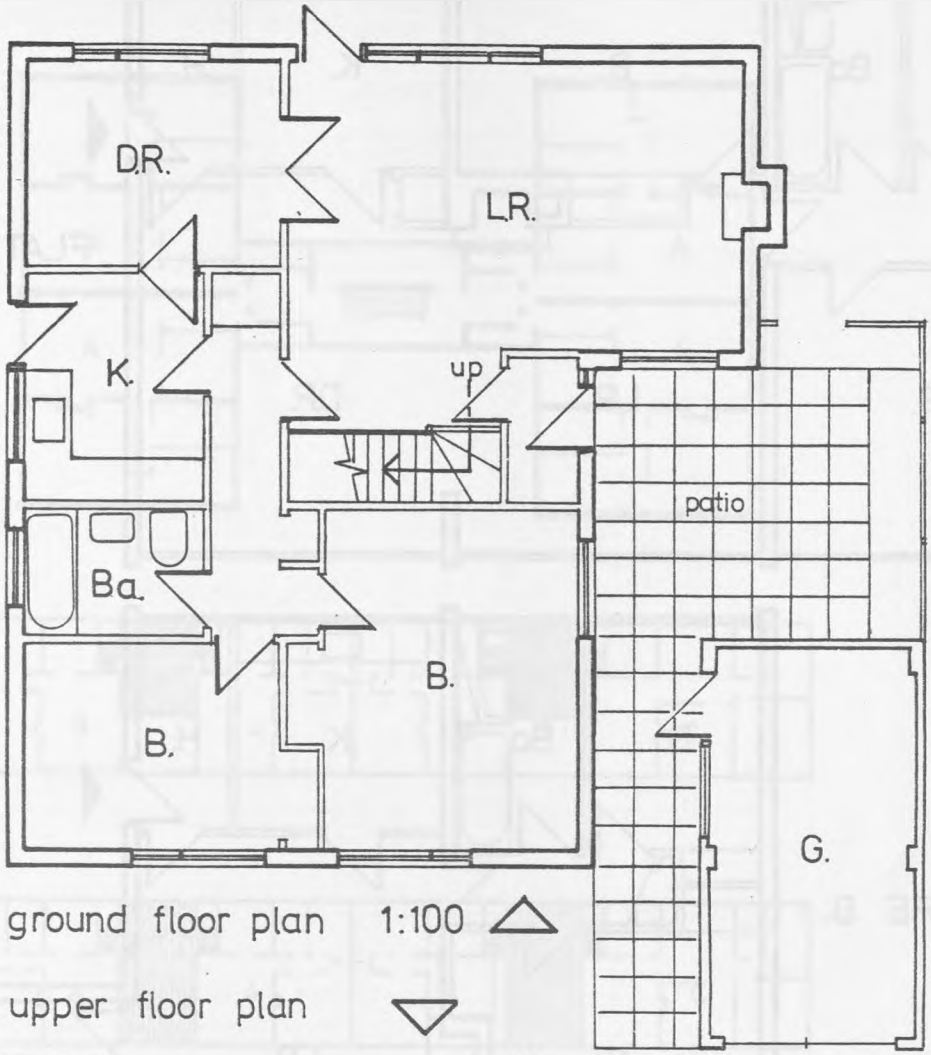


Fig. 9.7 THE DORMY HOUSE. WATES LTD. 1957.
Arch: K.W. Bland.

A breakaway from traditional design. Use of 'wasted' roof space. 'Sun trap' patio.



ground floor plan 1:100

upper floor plan

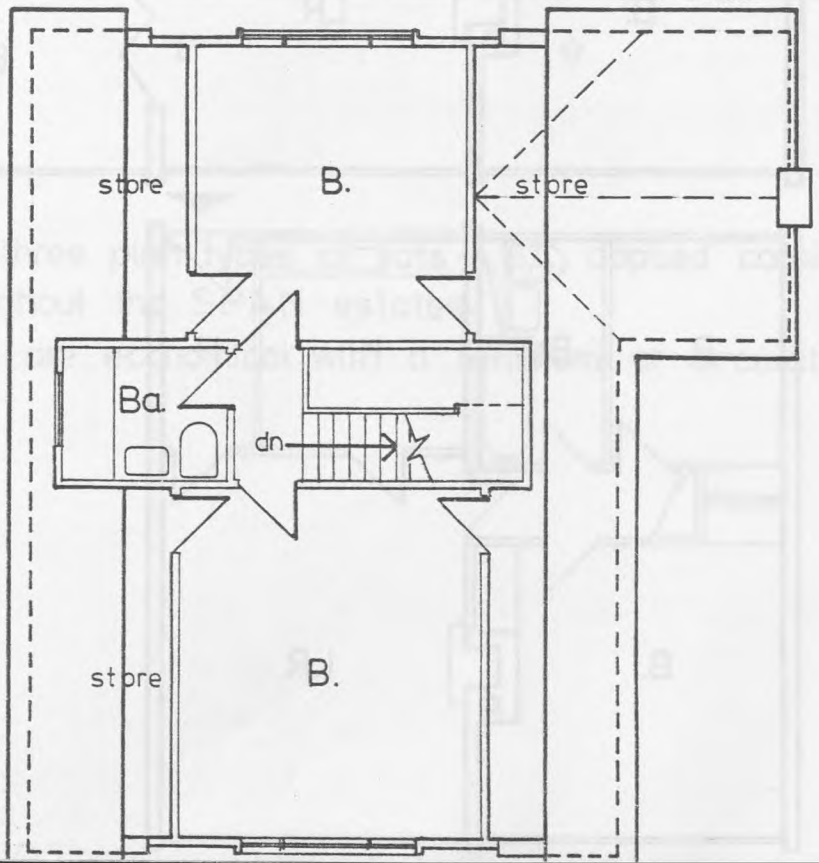


Fig. 9.8
FLATS AT HAM COMMON, PARKLEYS ESTATE. 1957.
SPAN Developments Group. Arch: Eric Lyons.
Scale 1:100.

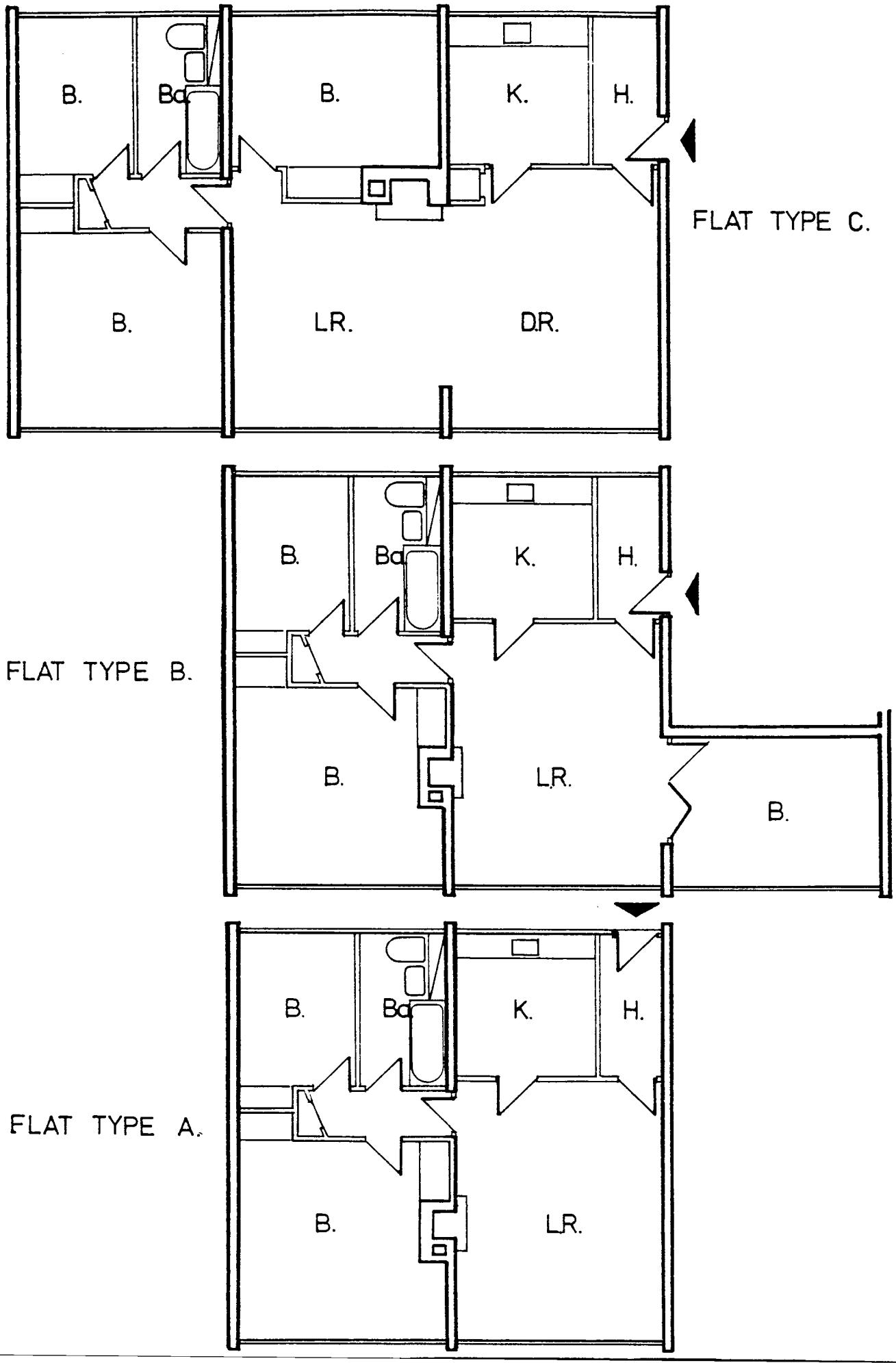
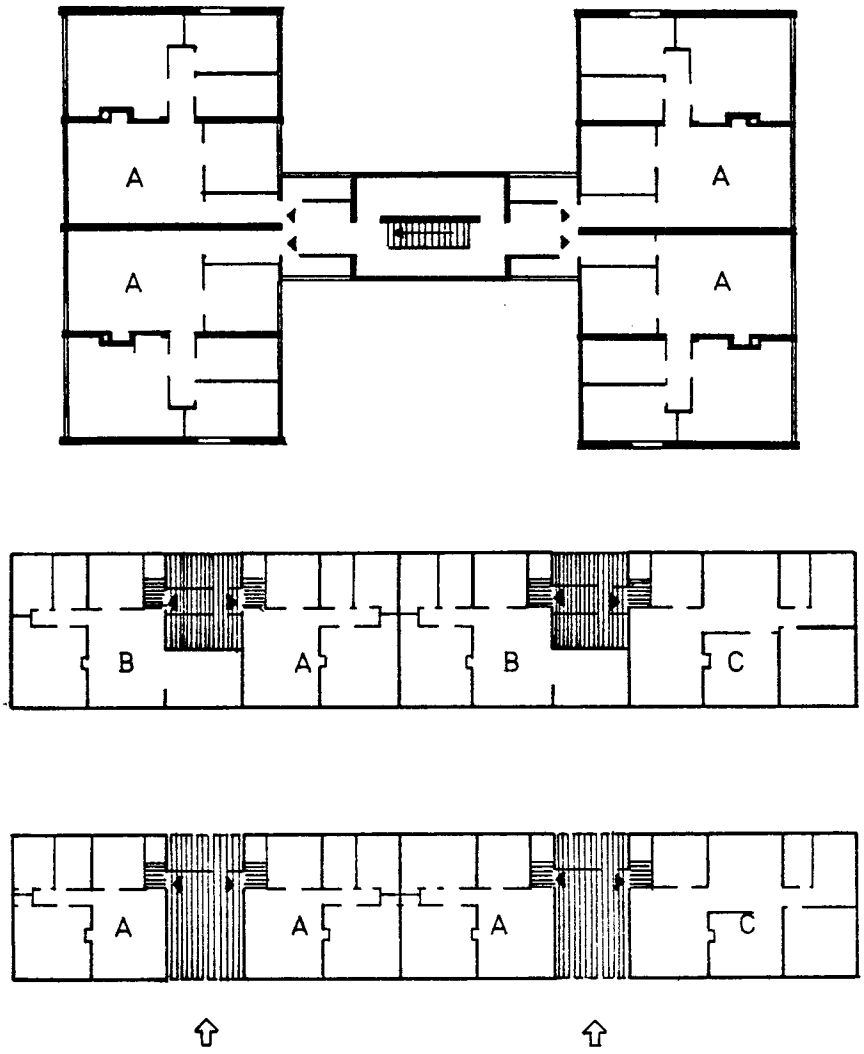


Fig. 9.9 FLATS AT HAM COMMON, PARKLEYS ESTATE 1957.
LAYOUT PLANS SHOWING DISPOSITION OF FLATS
IN TYPICAL BUILDING UNITS OR TERRACES.
S P A N Developments Group. Arch: Eric Lyons



The three plan types of flats A,B,C, applied consistently throughout the SPAN estates.
They are economical, with a minimum of circulation space.

Fig. 9.10 TWO STOREY TERRACED HOUSING AT LYTON GROVE, PUTNEY 1958. Arch: Richard Pollock.

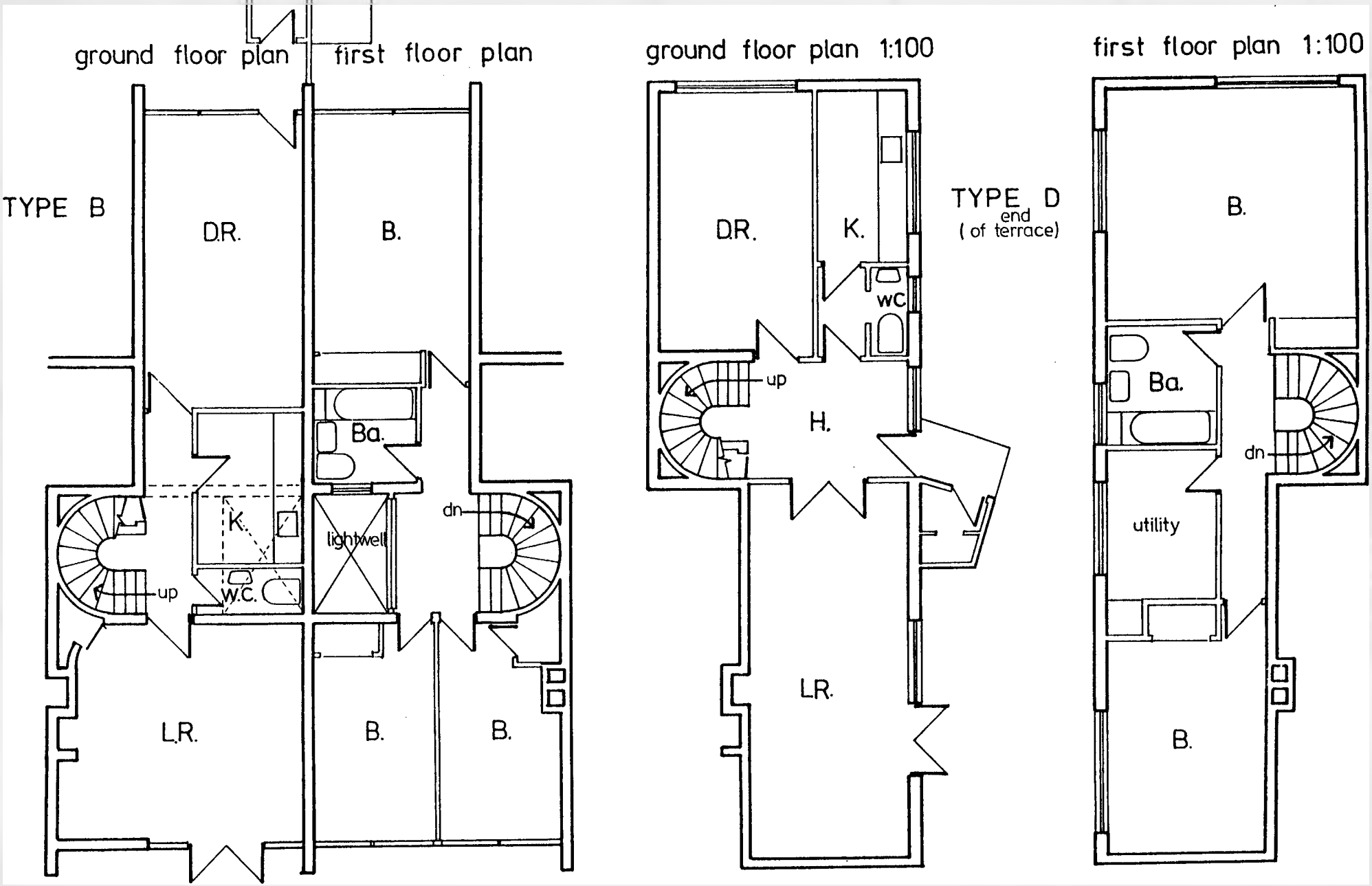
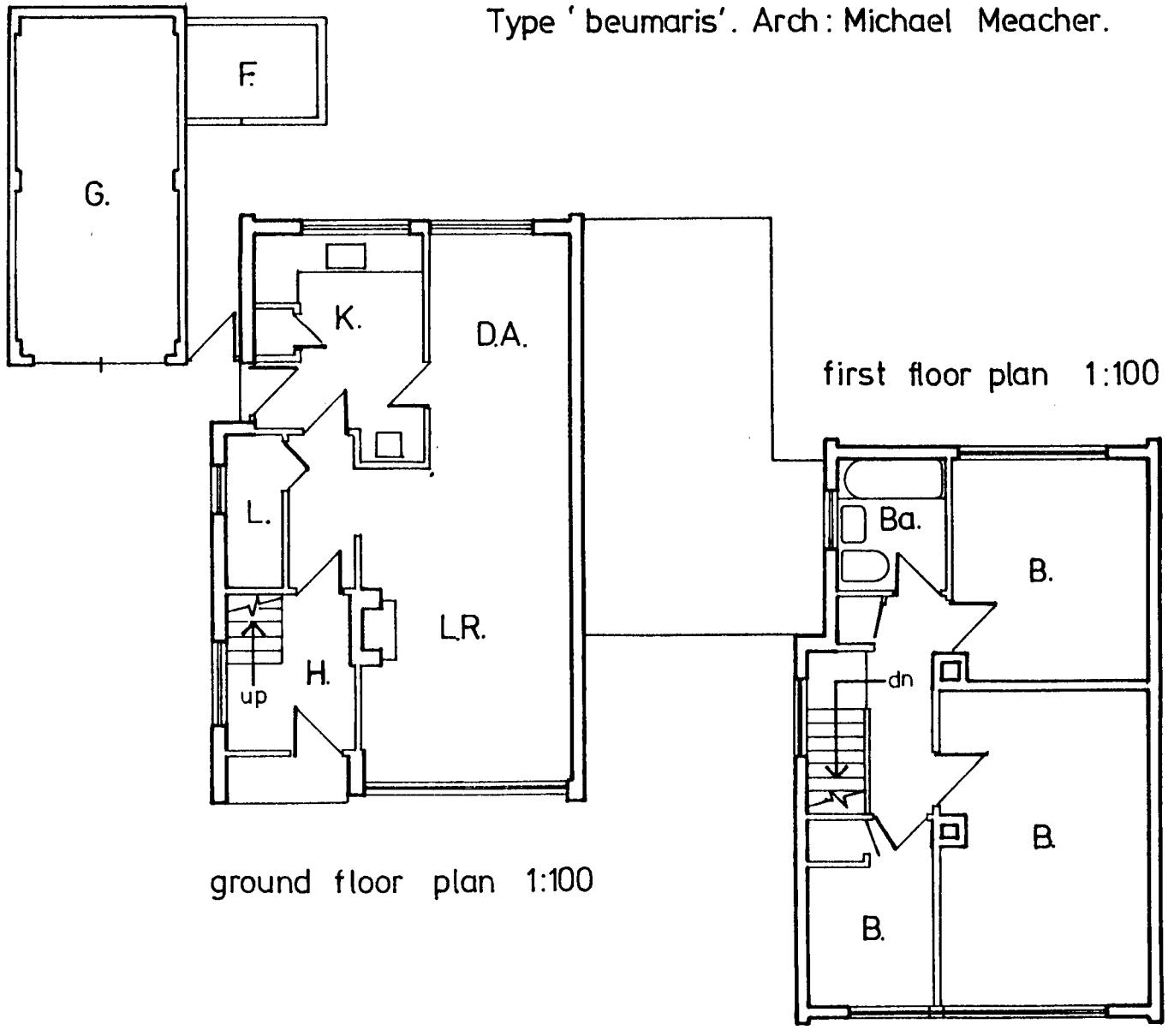


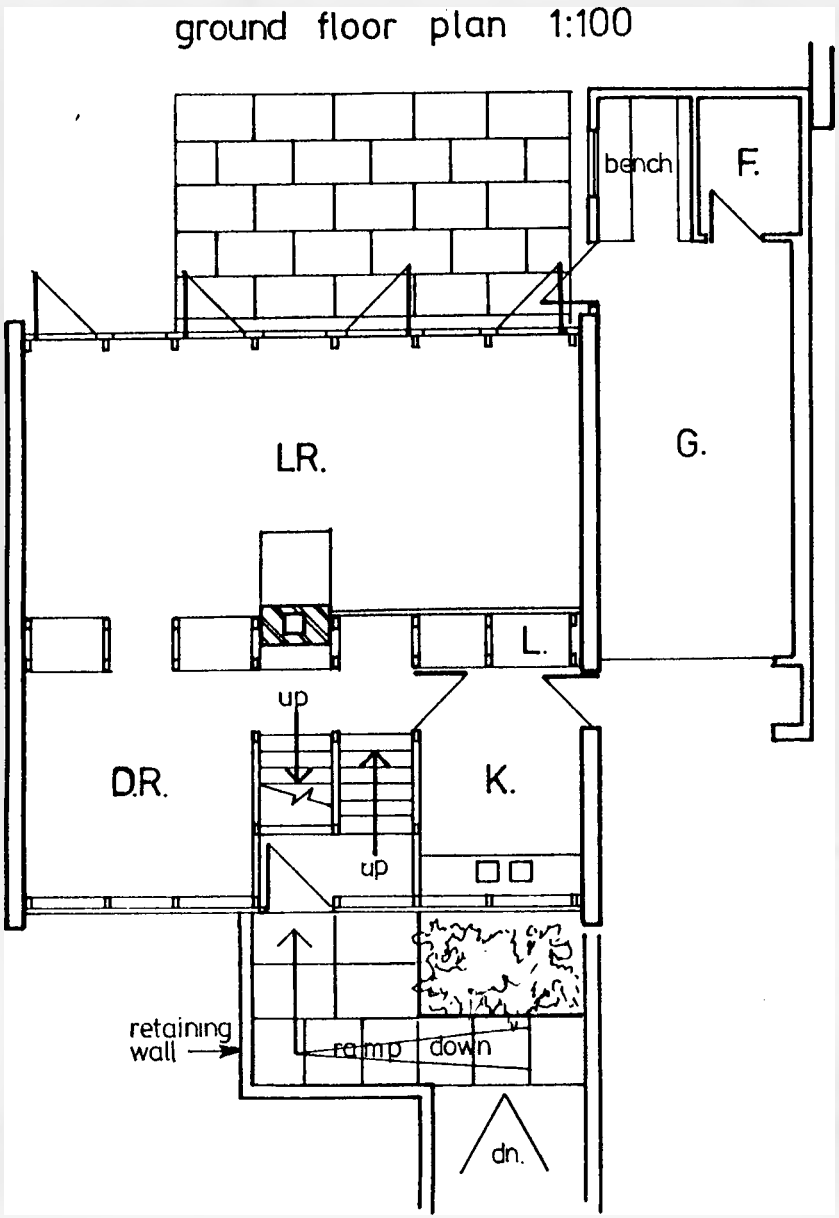
Fig. 9.11 HOUSING ESTATE AT SUNBURY-ON-THAMES 1958.
Type 'beumaris'. Arch: Michael Meacher.



ground floor plan 1:100

first floor plan 1:100

Fig. 9.12 THE 'CUBE' HOUSE. HOUSING AT HEMEL HEMPSTEAD 1958.
Arch: Maurice Hardstaff.



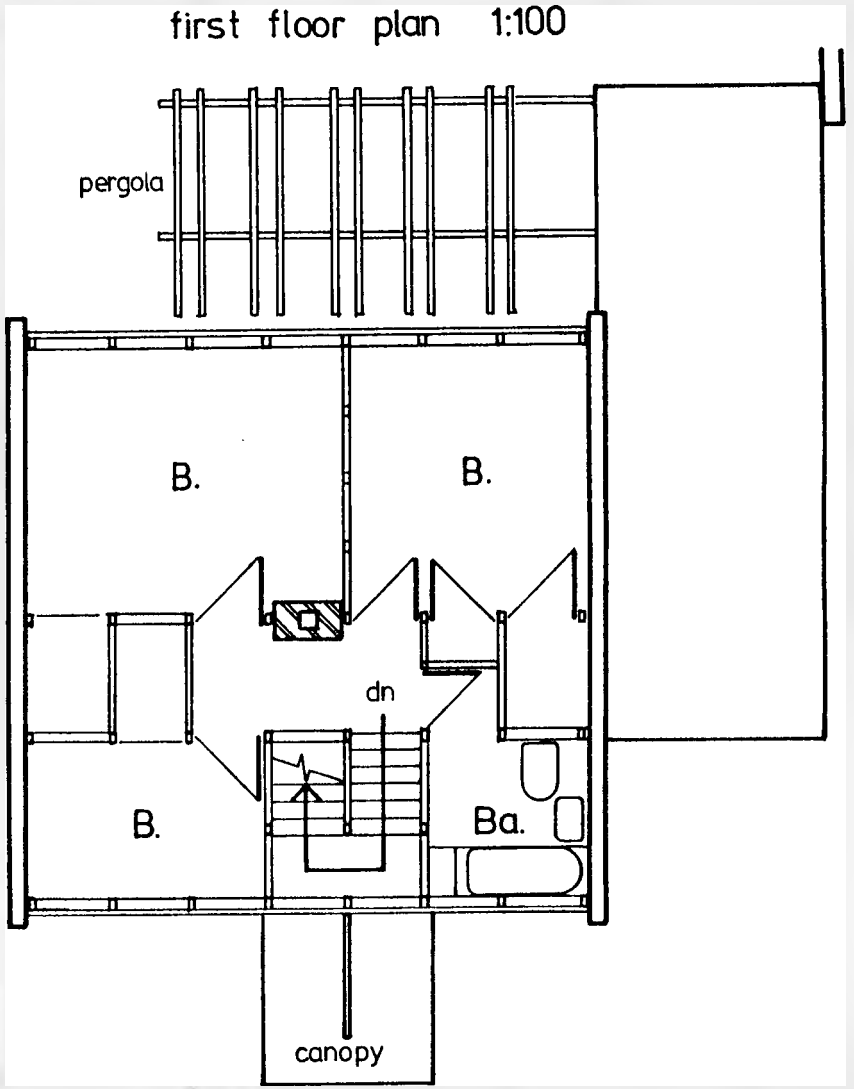
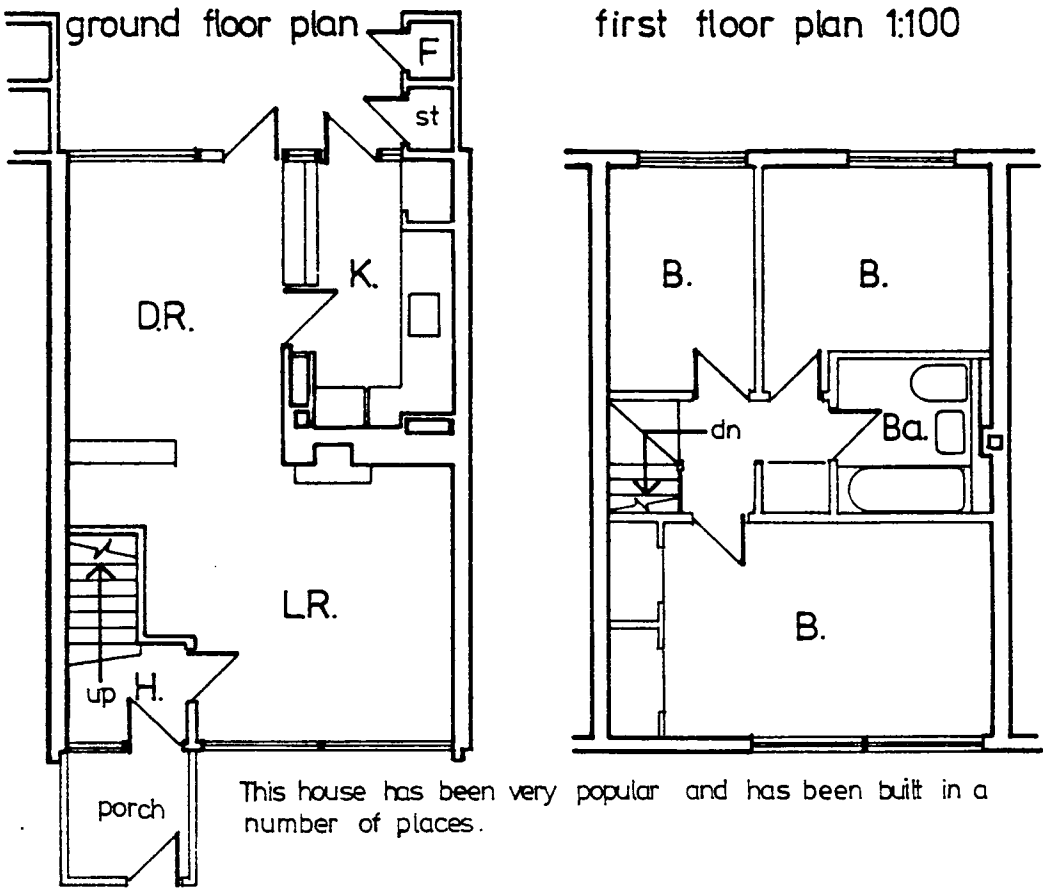
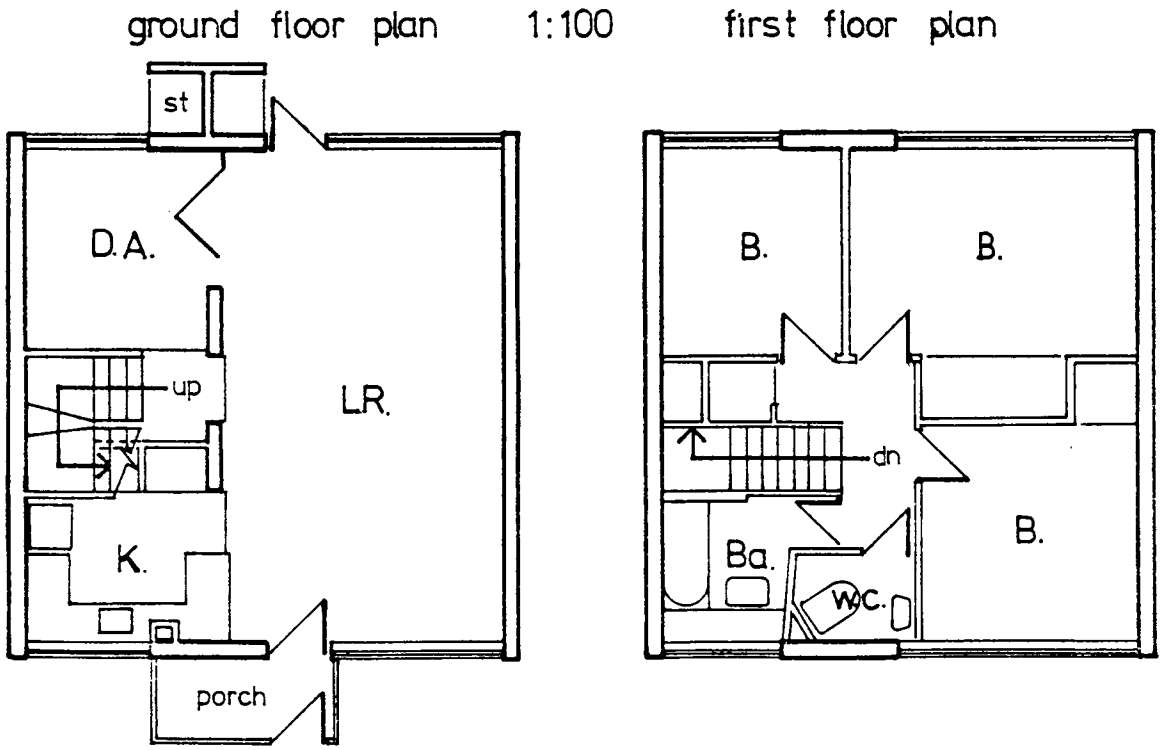


Fig. 9.13 'SPAN' TYPE T2 TERRACE HOUSE 1958.
TEDDINGTON DEVELOPMENT. Arch: Eric Lyons.



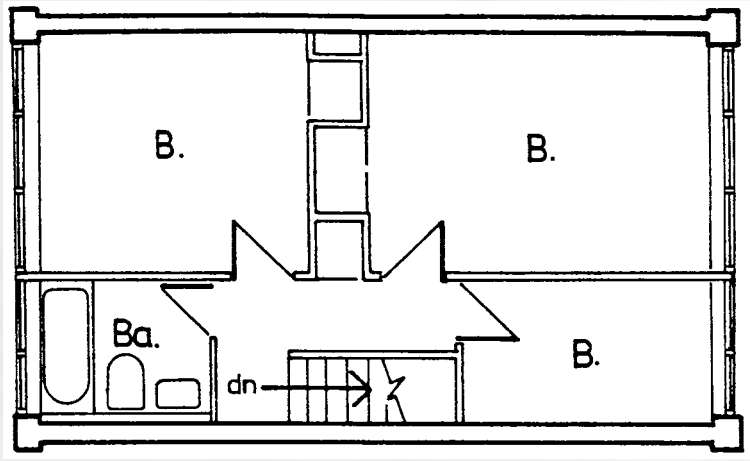
This house has been very popular and has been built in a number of places.

Fig. 9.14 'SPAN' TYPE T8 TERRACE HOUSE 1960.
THE HALL ESTATE, BLACKHEATH. Arch: Eric Lyons

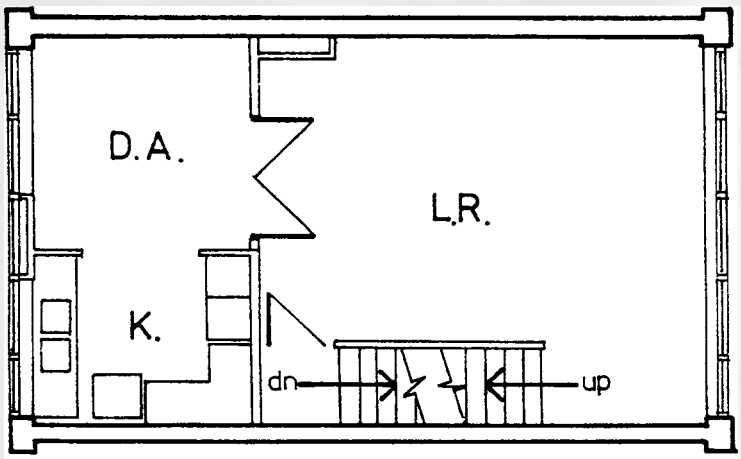


Open plan of ground floor made practicable by underfloor electric heating.

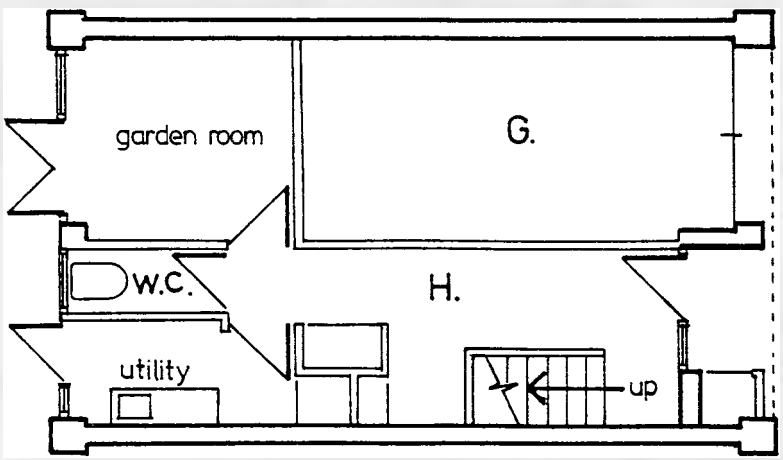
Fig. 9.15 A THREE STOREY TERRACE HOUSE 1966.
CROYDON - LONDON AREA. WATES LTD.



second floor plan 1:100



first floor plan 1:100



ground floor plan 1:100

Fig. 9.16 TWO STOREY 'STANDARD' TERRACE HOUSE 1966.
HURST PARK - LONDON AREA. WATES LTD.

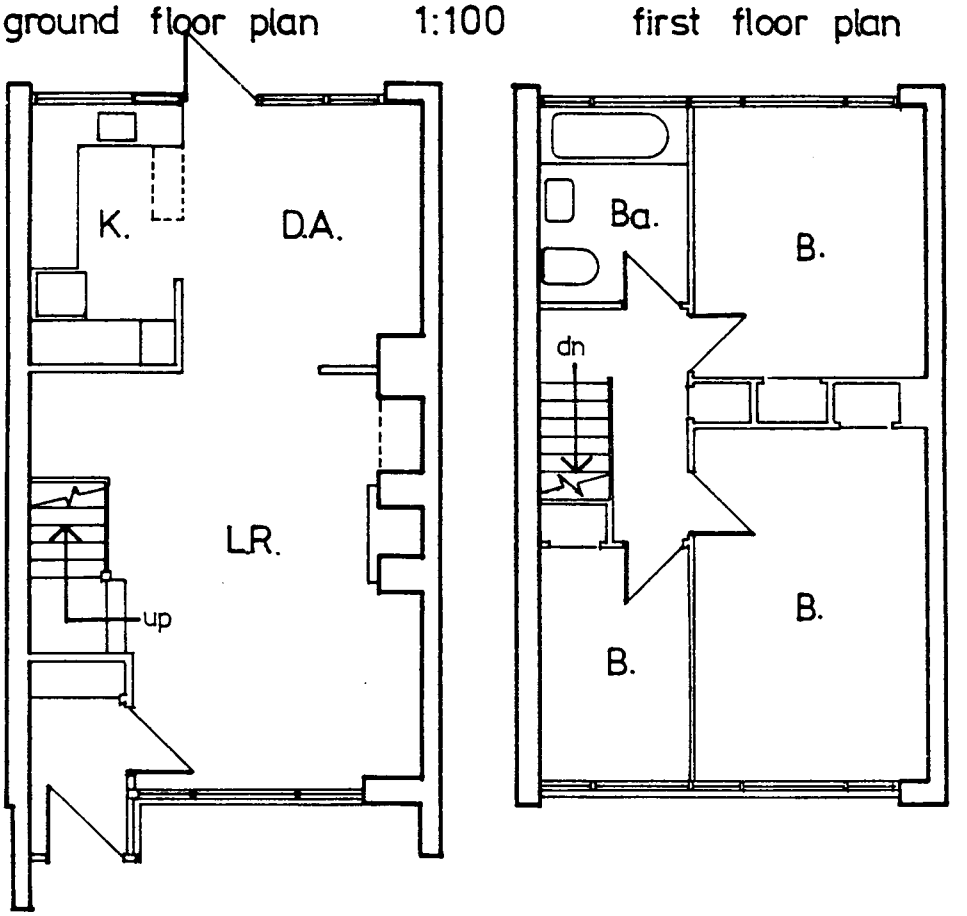


Fig. 9.17 TWO STOREY TERRACE HOUSE 1966.
LEE - LONDON AREA. WATES LTD.

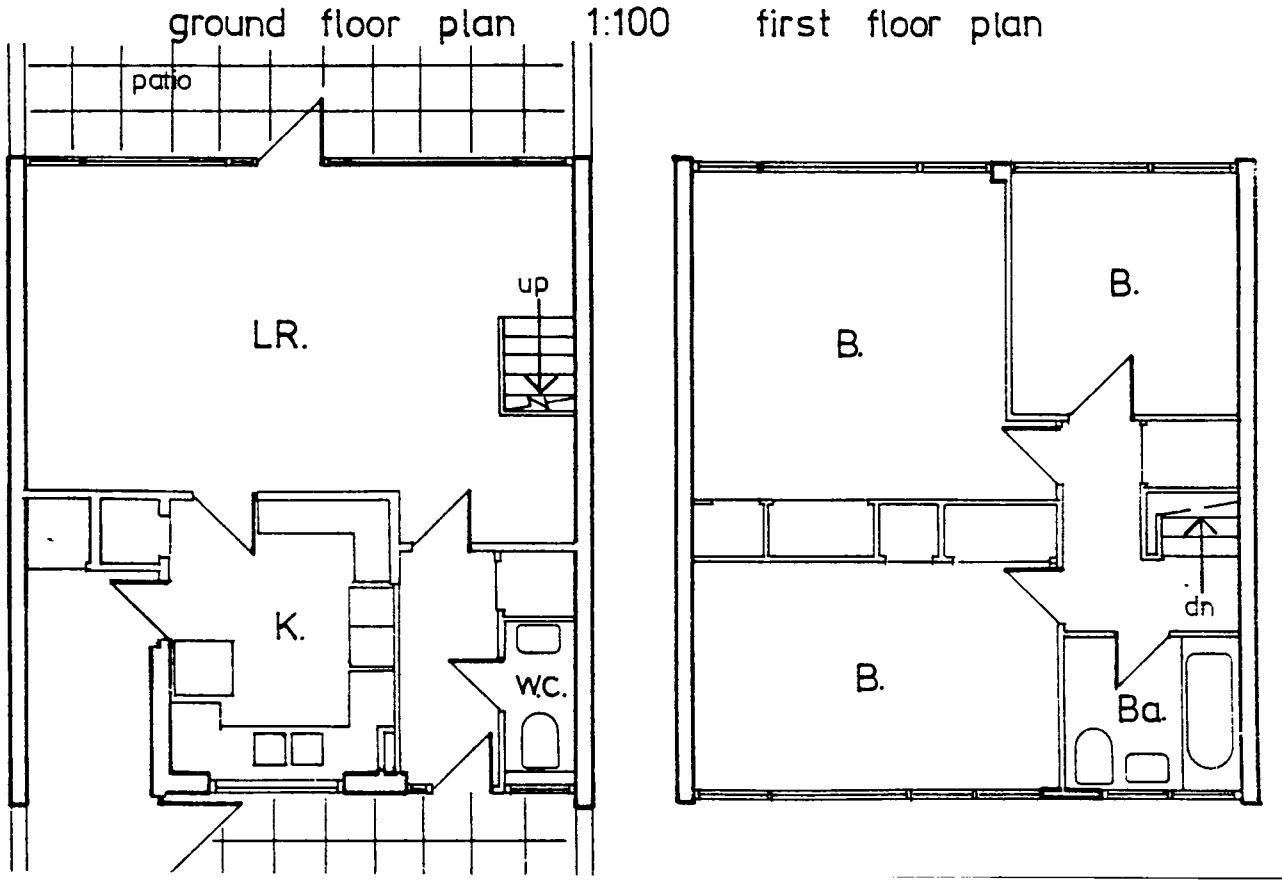
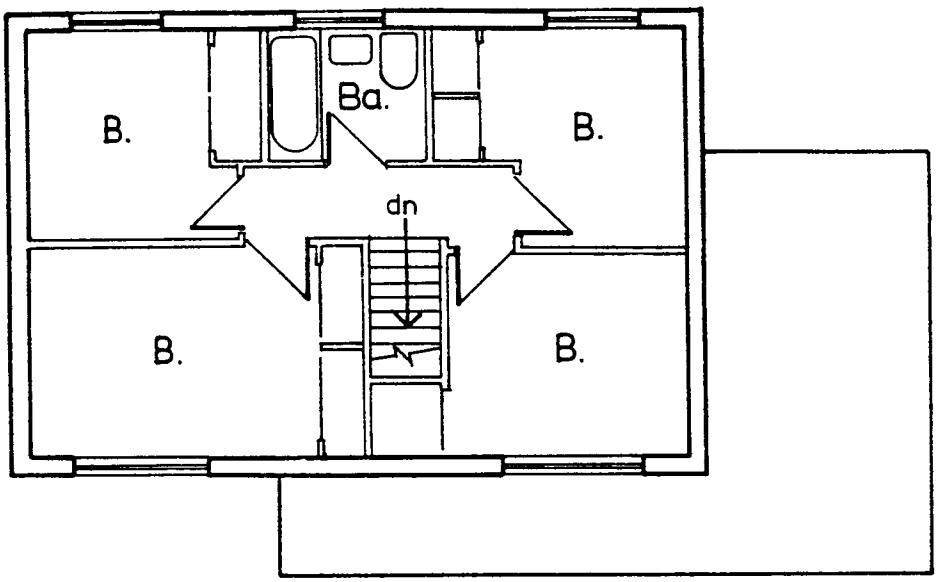
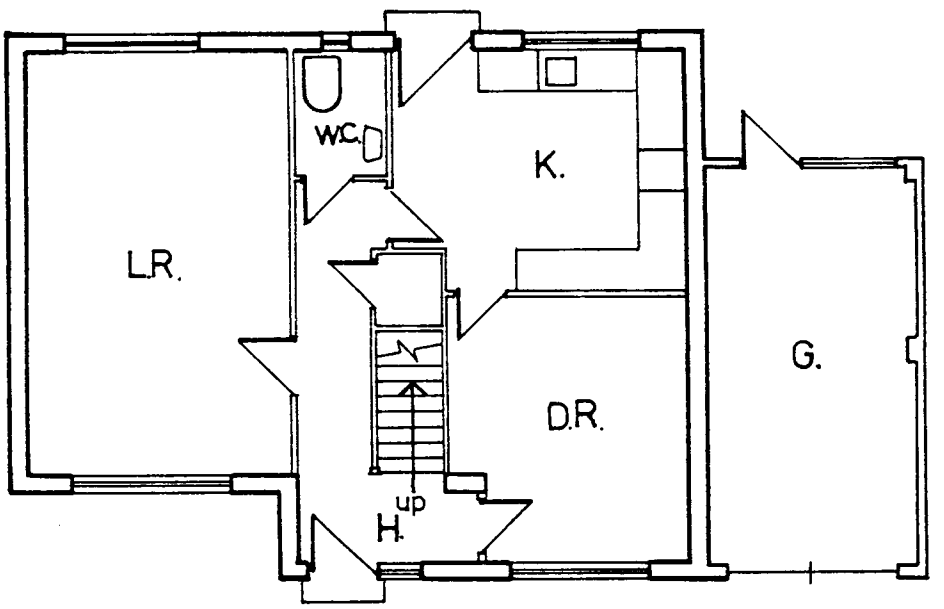


Fig. 9.18 THE "KERRERA" STANDARD HOUSE TYPE 1977.
CENTRAL SCOTLAND. BARRATT DEVELOPMENTS LTD.

first floor plan 1:100

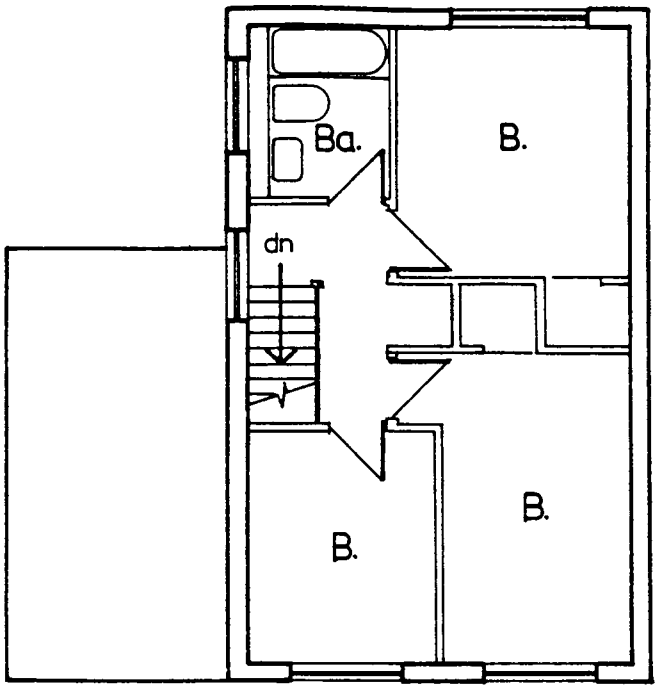


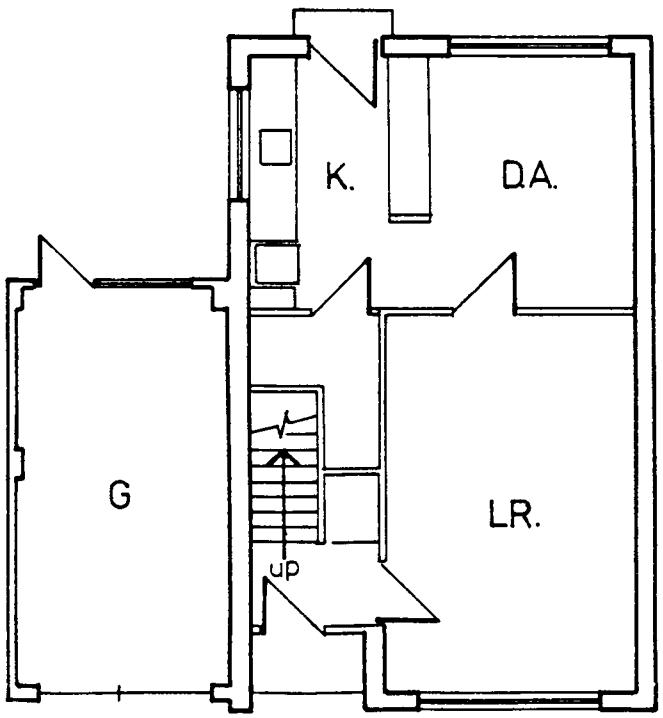


ground floor plan 1:100

Fig. 9.19 THE "WESTRAY GIGHA" STANDARD HOUSE TYPE 1977. CENTRAL SCOTLAND. BARRATT DEVELOPMENTS LTD.

first floor plan 1:100

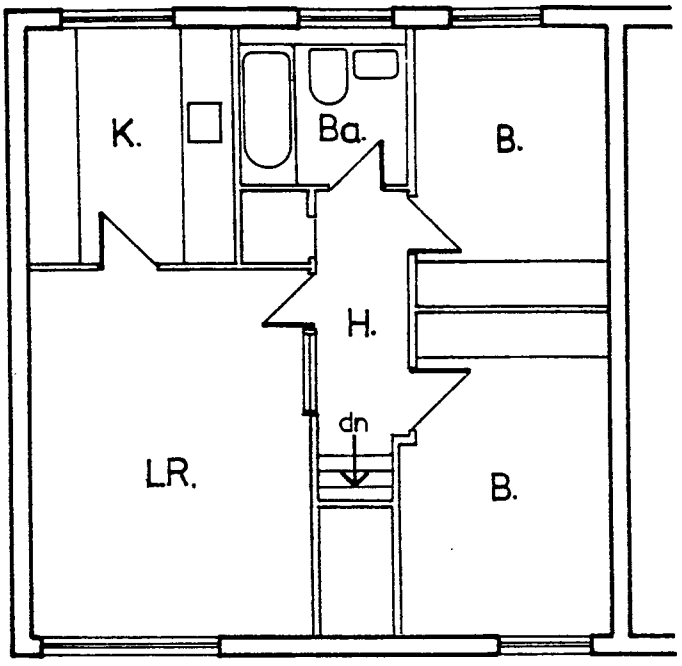


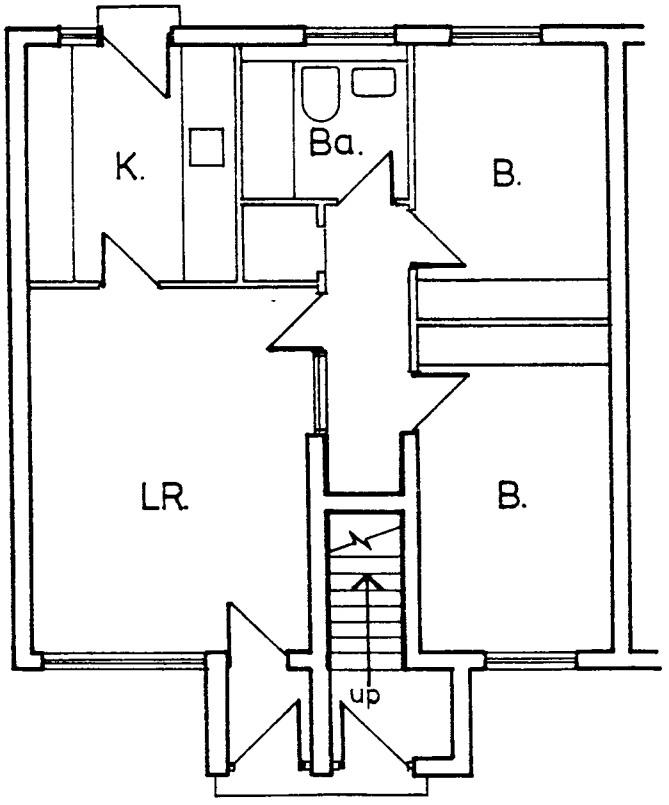


ground floor plan 1:100

Fig. 9.20 THE "LEWIS" STANDARD TYPE OF FLAT 1977.
CENTRAL SCOTLAND. BARRATT DEVELOPMENTS LTD.

first floor flat 1:100





ground floor flat 1:100

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13. Tait, Andrew, W., Interviewed by 'Building', "Taits Help for the Homeless", Building, Vol. 227, October, 1974, p.82.

CHAPTER 10: Factors that Influenced Housing Design During the 1945-1975 Period

Section 10.1.1: The Architect, the Developer and the Purchaser's Requirements

In the past, almost as a rule, the architect had adopted one of two attitudes to speculative builder's work. Either he had taken it up with some reluctance, usually at the beginning of his career when other jobs were not obtainable, devoting but little interest to it, and often was turning out stock plans to the builder's instruction, for the purpose of getting these approved easily by the local authority; or on the other hand there had been a tendency to lecture the builder or to adopt a superior attitude, ignoring, or at any rate making light of his peculiar difficulties and viewpoint.

Nevertheless it was the architect's task to convince the builder that he had something essential and valuable to contribute to his enterprise, and that his business operations could only be satisfactorily dealt with when he had the full collaboration of the professional architect; a task which he - the architect - 'took lightly'.

To the developer, like any other businessman, making a profit is not only the first but the overriding objective; so it was inevitable that the architect's main contribution - not to say the only contribution - which would have been appreciated by his employer - the developer - was to reduce costs, no matter the 'box rooms', the house's planning in general. This was the case until mid-fifties when 'things' started to get slowly better for the whole housebuilding industry.

With respect to the builder's attitudes to the planning and design of the dwellings he erected, naturally, to a large extent it reflected the mentality of the purchaser, a situation almost unchanged till today, fifty years since, as we read through D.F. Harris saying: ".... In deciding what to build the developer is guided by the state of demand in the housing market at a particular time, and he disregards any long term social need."[1]

It was curious that in regard to the design of his house, the purchaser's attitude seemed to differ from what it was when he was dealing with dress or furniture or amusement.

In obtaining such things he (or more correctly she) demanded the latest note, the previous year's fashions were soon out-moded; again the internal fittings of the house, labour saving devices and modern improvements were advertised and eagerly sought after.

But when it came to the real planning of the house, apparently no such standards were applicable.

Late victorian bays, stained glass effects and other knicknacks which were outdated even before the great war, were still popular.

Why was it that house purchasers had a liking of such 'features' as these? Was it the sentimentality of which the Englishman was so often accused, or was it a natural reaction from the horrors of stereotyped town streets, that he wanted his new suburban dwelling to have something about it that he associated with his idea of the country cottage? Were it not for this, we should not have seen so much 'ribbon' development during the 1930's, comprising of houses occupied by people who, although town workers, wanted to feel that they had literary 'a stake in the country', which should not resemble a municipal house.

Section 10.2.1: The Building Societies' Role

Building Societies' and private sectors' destinies are tightly linked together. If one of them 'goes', inevitably the other will go into decline too. Also the housebuilding operation in the private sector must be financed from somewhere - no matter the type of ownership or the category of purchaser - and this leads to the consideration of mortgage arrangements which are in being to assist ownership. This is why the Building Societies' movement, which has experienced a tremendous growth since the war, is the first in importance to the speculative builder. Indeed these mortgage arrangements play a very important part in the private sector's overall scheme of operations. As H.A.C. Dod said: "... The prudent developer does not leave his public to arrange their own mortgages, but obtains standard offer terms from Building Societies for his development. The Society approve his house plans and specification in advance and then offer so much on mortgage....."[2]

Speaking at the R.I.B.A., an official of the Building Societies Association, Mr. F. Lee made his Association's role crystal clear thus: "I feel I am entitled to point out to the Architects that Building Societies were not established to promulgate architecture or encourage new designs in housing. These may be subsidiaries, but the first aim of the Building Society is to promote savings and then lend them on proved buildings."[3]

It is obvious that Building Societies are cautious in putting money - not their money but that of their investors, they point out - at risk. This in turn naturally reinforces the developer's own caution and can create a considerable constraint on innovation, particularly in design and techniques of house construction.

So in these 'advance arrangements' to secure mortgage finance, the architect who proposes unfamiliar design ideas that might affect the long term investment of a dwelling has to'prepare' himself; negotiate with and persuade the Building Society's surveyor to his ideas. In Eric Lyons own words: "There is a major obstacle in the path of the architect working for a developer. The Building Societies with few exceptions, and despite claims to the contrary, maintain an atavistic attitude towards housing and seem to be happiest with the so-called tradition of half-timbered Georgian... they only show interest in suburban horrids and seem to believe that modern architecture is just a passing phase and a risky investment.... Generally, the Societies remain unmoved by our convictions."[4] But as Mr. F. Lee emphasised: "The first job of the Building Society is to attract savings and be able to pay them back. The Building Society has accordingly to take account of changes in design and taste and how long these changes will take to work out."[5]

The conservatism and over-cautiousness of the Building Societies can also be felt through the purchaser's caution towards unfamiliar ideas; he naturally at the time of buying also has his eyes on re-sale. Anyway the Societies with few exceptions "have shown themselves to be noticeably disinterested in research into techniques of construction or purchasers' needs."[6] Similarly for the lack of innovation in the private sector housing, Paul Ritter clearly puts the blame on the Building Societies as follows: "... Perhaps the most difficult problem is the conservatism of the Building Societies. Again and again innovations..... be in layout or plan... are vetoed by the Building Societies; why? They have no evidence that it will sell. More than any other factor the Building Societies are to blame for the horrible coverage of parts of all British suburbs with the same outworn building form of the semi-detached and

detached dwelling... they adhere to so pathetically."[7]

It should be more widely known that "... those developers who have been able to persuade Building Societies to change their minds about a particular dwelling type have done so by selling to cash customers at first and so persuading the Society of the demand of such accommodation..."[7]

"... In total, Building Societies are lending three times as much money on second-hand houses as on new property;... first purchasers are being forced for money reasons to buy second-hand property, and this with the help of the Building Societies...."[8]

Are the Building Societies really not the 'favourite scapegoats' for the lack of innovation in the private sector housing design?

The answer may well be that to a certain extent they are , as the Building Societies Association claim to be; but overall they do have to bear on their shoulders a big share of the 'responsibility' for the perpetuation of the "same outworn building form of the semi-detached and detached dwelling...".

Section 10.3.1: Other Factors

There are several factors both direct and indirect ones which affected the developer's decisions as to what he has built.

Here we are discussing in brief the most important ones which played a significant role in the kind of housing produced during the 1945-1975 period.

They are:

1) The Density of the Development:

As a general rule the lower the density the higher the quality of the development and vice-versa. The permitted density (usually expressed in person per acre) by the planning authority is of crucial importance to the developer. This is the one factor which controls almost completely the type of development i.e. how many semi-detached, detached or terrace houses are viable to erect. The density also governs the price of the land. Nowadays the planning authorities through their design guides (e.g. Essex Design Guide) encourage people to build to higher densities.

2) Land Cost:

The land is the private house-building industry's major raw material and the price the developer has to pay for, does have an influence on the type of dwellings he will build. The land cost has an even greater effect in areas with a growing shortage of suitable building land, where the developer has been 'forced' in a way, to either build bigger and more expensive types of houses which can bear the high cost of land, or alternatively try to increase the density to the limit to spread the land cost over a larger number of units to make his development economically viable.

Both alternatives imply that land cost determine not only what shall be built,but to a very large extent, the sort of people who will buy what is built.

3) The 'Surroundings" of the Proposed Development Area:

Bearing in mind that the planning authorities 'force' the developer to build in relation to the already existing character of the surrounding the proposed development area, it becomes apparent that the 'nature' of the surrounding developments is indeed a very important factor in deciding upon the type of housing to be erected on the proposed development's site.

As one builder quoted to say: "... you don't build houses in the £30,000 bracket if the approach road is going to go through rows of 'back to backs'".

4) The Vagaries of Economic Policies:

The key to the private housing market as a whole is a sufficient flow of Building Societies finance, which in turn is controlled by Central Government's economic policies. Therefore periods of economic uncertainty and of high mortgage rates are of the worst that can happen to the private developer; these in turn are affecting his decisions as to what he is going to build, 'how', in what 'form' and so on.

5) Building Costs:

Rising building costs of all 'raw' materials, including land, forced the private builder out of the low-cost housing market - where he was before the second world war - to the upper part of the housing market.

As a consequence of increases on building materials since 1958 the developer had to introduce a bigger range of house types - the range being one of price

rather than plan or elevation - in steps of around £200 or more, starting with say a two bedroomed flat, through various sizes and types of terrace houses to end up with three bedroomed detached bungalow.

"... The days of the long straight run of a single house-type were over....".

6) The Attitudes of the Public:

"... The public is our educator, because if we can't sell we are out of business..." one builder said.

The private developers do rely very much on this factor of customer's taste and reaction, to fix the types of houses to be built.

We saw beyond doubt that the purchaser's ideal home is the detached house with a garage within its curtilage, by contrast to the terrace which is somehow regarded as an inferior place to live in. So "... we don't build them - even though we review this policy regularly, we just can't see a demand on economically viable scale to warrant us going in..."[9] To create a demand for them (terraces) they say that they have to landscape them first, before being seen by the public; and even then sell slowly.

7) Price:

A factor which either directly or indirectly comes into each single factor mentioned above. Price is also the most important selling factor too. Above all, in the private sector, price and size of the house 'go' hand in hand. Therefore the size of house a family occupies is dictated more by the family's ability to finance the purchase than by its size. The Builder's dilemma is typified in the following quotation: "... We would all like to build to Parker Morris standards but not every purchaser can afford them... If we build to Parker Morris we

> cut off a very large proportion of potential house purchasers. When price is the overriding consideration and we find a sensible economic design works out below Parker Morris we ignore Parker Morris...."[9]

In conclusion 'economics' turns out to be the common denominator of all the above mentioned factors and indeed the most important one as far as the private sector housing is concerned.

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CHAPTER 11: Conclusions

STANDARDS. The industrial and urban expansion of the 19th century undoubtedly created the need for minimum standards of mass housing - inferior as it was with day-lighting and ventilation severely restricted and rudimentary sanitation only. With the 1848 Public Health Act some minimum standards began to evolve such as-that each dwelling should have a continuous supply of cold water, house drains should be connected to a main sewer, there should be a w.c. for every two houses etc., while daylighting and ventilation were improved by requirements regarding open space about a dwelling and by the prohibition of the 'back to back' houses. Then came the 1875 Public Health Act from which the model byelaw street sprang - a very significant improvement by comparison to what had gone before. It was followed by the 1890 Housing Act which prepared the grounds for the early twentieth century housing reform movement. This movement's main concern was not only confined to 'health' but housing of better standards too. Indeed the main principle behind the sanitary approach to standards of all Housing Acts so far, was the maintenance of public health. In 1918, the Tudor Walters Committee was set up by the Government "... in connection with the provision of dwellings for the working classes in England and Wales and Scotland". This Committee's report was the corner stone of public housing standards and design.

A major step forward in housing policy, following World-War-II, was the Dudley Report of 1944. It noted: "... a steady rise in the general standard of living and a growing desire for an appreciation of good housing - in particular of convenient domestic arrangement and labour saving fittings. We expect that tendency to continue after the war." In this, the report was right, what it could not foresee when the minimum room areas were

laid down, was that the cost of building would run away by 1952, in the region of 300 percent of the pre-war datum. Indeed, since the first 'extravagances' in housing provisions laid down by the Housing Manual 1949, we have noted a steady whittling down of the size and equipments of the dwelling. Reporting for the second time in 1950 the Girdwood Committee on the Cost of House Building said: "We do not think it possible to make recommendations which would result in substantial reductions in housebuilding costs whilst present standards of size and equipment are maintained." This only confirmed what many housing authorities had experienced. First the second w.c. had gone, the 8 ft. ceiling began to shrink to 7 ft. 6 in., then came a reduction in the circulation space of the house (noted in "Houses 1952" Manual) followed by Circular 37/52 which enabled all but the essential equipment in a dwelling to be eliminated.

The interests of speed and economy had been allowed to take almost total precedence, and consequently the standards had deteriorated badly. Indeed, the continual short term viewpoint on housing as a result of changing Governments and therefore rapid swings in policy, often without due consideration (too often for political reasons - "we built more houses than they did") brought housing standards down for the second time since 1918 in the continual fight between rising expectations against economic restraints. The point is that the nation found itself committed by successive Governments to standards of housing which, by 1952, bore no relation to its ability to pay for them. In effect, most of the major provisions of the Housing Manual 1949 were disregarded except those relating to the sizes of rooms, and in London at any rate even these were not inviolate, for the L.C.C. had clipped 15 ft.^{2} off its main bedroom, bringing it down to 120 ft.^{2}.

The typical local authority dwelling continued to be conditioned by certain minimum room areas and overall area standards laid down by the housing manuals of the M.O.H. In 1961, the first major review of housing standards since 1944 took place, with the publication of the Parker Morris Committee Report. Minimum room areas gradually disappeared during the 1961-1968 transitional period at the end of which Parker Morris standards became mandatory to all public sector housing. From this date (1961) onwards, two main things have happened. The first was an unending flow of government housing circulars which have laid down precisely, long, tedious and restrictive directions about design and standards based on a narrow so-called rendering of Parker Morris guidelines, and the second was a parallel restriction of the freedom to go beyond the minimum standards with the introduction of mandatory cost control, which resulted in complete control over the size and design of the dwellings. Although in formal terms public housing is still provided by Local Authorities, government orders have removed from them the responsibility for their own actions and stood between housing architects and their real clients; the architects being forced into preoccupation with the ingenious manipulation of space (e.g. scissors plans) in order to meet the brief within the economic and social constraints, too often to the detriment of the overall quality of housing.

On the whole, the period under review, is one of uneven progress. The 1918 Tudor Walters standards were reduced in 1923 and further in 1930 because of economic depression, and those of the Housing Manual 1949 were reduced in 1952 in order to step up the annual rate of housing completions. The comparison of Parker Morris space standards with those of 1949 showed that the first are generally a little lower than the second, while the first also are very slightly above the Dudley Report standards of 1944. Heating standards remained unchanged since 1949

(except in housing for elderly people), as well as the sanitary provisions, with a small increase in the number of socket outlets and some improvement in the storage space, fittings and equipments. The comparison of the N.H.B.C.'s and those of Parker Morris' standards covering all aspects (on plan arrangements, spaces, fittings, space heating and furniture) showed that the private sector standards are largely concerned with the details of construction, fittings and equipment and so are complementary to those of the public sector rather than directly comparable.

As far as space standards in the private sector are concerned it does not have any at all. The private sector started to act in an 'official capacity' as a single 'organised body' in 1936 when the N.H.B.R.C. was established with the full support of the M.O.H. The main if not the only purpose of the N.H.B.R.C.'s establishment was to safeguard standards of construction of the private sector dwellings and issue certificates of 'sound construction' as a reassurance to the purchasers, following the so called 'jerry building scare' of the early 1930's. There were no thoughts at that time of any sort of design standards being introduced. All private sector houses were literally 'built' rather than designed right up to the late fifties. It was not until after the Parker Morris Report came into being that the N.H.B.C. was forced in a way to start thinking of introducing measures to improve design standards of the private sector dwellings, and it did make a small step forward in 1969 when it made mandatory to all its members some internal planning design standards such as kitchen layouts etc. based on the Parker Morris Committee recommendations. Even though the private sector does not have to comply with the public sector standards, it nevertheless has to build in accordance with various Health and Town Planning Acts as well as the Building Regulations and other planning instruments such as Design

Guides (e.g. Essex Design Guide) which vary from place to place within the country.

DESIGN. From the 'back to back' designs of the 1830's we moved to the byelaw houses of the early twentieth century, which were continuing to be built after the First World War. A large number of these two-bedroomed byelaw terrace houses were built before 1914. No matter the high standards recommended by the Tudor Walters Committee in 1918, only a proportionally small number of houses were built to its recommendations. On the whole the house types put forward by this Committee are of the three-bedroom parlour or non-parlour cottages. Following the Second World War, a temporary housing programme was initiated by the Government to reduce the post-war housing shortage. Despite the temporary nature of the 150,000 prefabs built throughout Britain, and their low floor areas, their kitchens and bathrooms were equipped to very high standards of fittings never before offered to local authority tenants.

In 1944, the Dudley Committee found that there was unanimous evidence that the scullery of the inter-war local authority houses was far too small. Cooking by a coal range was almost universal during the inter-war period and as the range was generally the only source of heating, it was placed in the living room where as a consequence, all meals cooked and eaten. With the widespread of public services after the Second World War and the advent of the gas and electric cookers the process of cooking was transferred to the scullery where the gas cooker was naturally placed. As a consequence, the kitchen equipment followed the cooker into the scullery where most of the daily meals were accordingly eaten, even though it was totally inadequate for this purpose. This led to the transformation and expansion of the inter-war scullery into a modern post-war kitchen. The Dudley Committee also suggested three alternative ways of dividing up the ground floor from a functional point of view, having in mind the

needs of the family. These alternative ways viz: the Dining Kitchen, Working Kitchen and Kitchen Living Room arrangements were found to meet most of the varying needs throughout the country and so were retained with certain modifications required by the improvements in housing standards. The 'parlour' of the inter-war period had gone, while dirty works such as washing clothes, formerly in the scullery, now have moved into the utility room, to make the kitchen a livable room.

The local authority house designedpartly as a result of the minimum room areas and other space standards imposed upon them by the housing manuals, and partly perhaps of the general assumption that a five-person family requires only one single and two double bedrooms, became too rigid and too standardised. Within a tight floor area imposed also by a minimum budget, there are, in fact, precious few ways in which the space within a house can be divided up, if each one of the rooms has to conform with certain minimum areas. Although dwellings with two dayrooms are featured in the 1944 and 1949 Housing Manuals, the major part of local authority post-war houses contained one dayroom (L-R) only. As a result of the economic depression of the 1950's,Local Authorities were compelled to take advantage of economies of land by building more terrace houses of various types with frontages as little as 4.7 m wide between party walls. Another result of this economic climate was the move towards the standardisation of the house interiors to increase speed and efficiency. So,the adoption of the 3 ft. planning grid, initially asserted by the B.S.I., was officially endorsed by the Bailey Committee in 1953.

By early 1960,fewer council houses of lower quality were built to fall in 1961 to their lowest number since 1947. By 1963,the country was faced with a vast programme of new building with a limited labour force. With rising interest rates, building costs were of vital importance,

and the answer to the cost problem in council housing was seen to lie in the use of high-rise industrialised building methods linked to speed in construction and saving of land. Industrialised housing, hoping to achieve economies and increased output was raised to the status of a panacea by 1965; the M.H.L.G. having committed itself to industrialised building (on the advice of the N.B.A. which it set up to advise on such matters) pressed Local Authorities to build at least a proportion of their houses by industrialised methods. But industrialised housing required large scale of production which to be fully economical meant standardisation and simplification of components. Dimensional co-ordination was also introduced with a major object to obtain value for money in housing by increasing the use of mass produced components.

Flats and maisonettes in tower and slab blocks were among the main types of dwelling being built at the time. Apart from the stylistic innovations, many improvements incorporated into the design of flats viz: back boilers replaced coppers, all bathrooms were fitted with lavatory basins, there were laundries instead of washing houses, drying cabinets instead of outdoor drying areas for clothes. Perhaps the most significant one was the development of lifts enabling flats to increase in height to more than eight storeys or higher, together with the replacement of balcony access with internal staircases, producing an entirely new level of comfort and altering radically the form of blocks, both internally and externally.

During the 1960's, a battle was fought all over Britain. Its context was to build faster and cheaper and improve productivity and quality of design. It is this background against which the establishment of the N.B.A. and its House Shells must be seen. The N.B.A.'s house Shells, a theoretical approach to the nation's housebuilding problems, are an 'intellectual geometrical exercise' of how

to arrange a "room within a box'. These Shells, which provided the basis for the local authorities' low-rise high density schemes, started to be built after 1970, following the 'fall' of the high-rise housing. The Parker Morris mandatory standards, to which these Shells were designed, was hoped to permit a much greater variety of houses and give architects the chance to make possible greater adaptability in the use of rooms. With the 'advisory policy' tactics through housing manuals over, by late 1960's, the Government now is directly intervening into the smallest details of design. It is this intervention and the negotiations between Local Authorities and Government, formally about costs, in reality about design, which have been responsible for odd and convoluted compromises which have resulted in many very unsatisfactory housing designs today.

On the other hand, the housing shortage problem has been solved as long as ten years ago when Britain since 1968 started to build up a surplus of dwellings which reached half a million dwellings by 1976. What emerges behind this surplus is a deficiency of homes that people want to live in, (something of a private sector image) the location they desire, and a rigidity in the supply of desirable dwellings. Also there is a growing need for more dwellings for smaller households. As far as their internal space is concerned, without doubt there is an urgent need to consider whether the amount of space required for one and two-person households should be proportionately more than for larger households. We believe that the demand for small, well designed homes is gradually building up and the reason for being at present, at a latent state, is primarily due to resistance granting planning permission, the Building Societies preference for lending on standard-size houses and the present structure of rent allowances and social benefits which offer little incentive to tenants to seek anything smaller than a standard house.

As far as the private sector is concerned it was the 'universal plan' which the speculative builder literally 'built' throughout the inter-war period, during which design was almost totally ignored. His approach was a quantitative one which is particularly true during the whole inter-war period and the first post-war decade. Due to different factors operating upon him, he had to restrict himself to very few standard solutions which kept repeating throughout his development. This design 'picture' remained unchanged until 1960 when the whole field of domestic architecture was in the early stages of a complete evolution. During the 1920-1962 period, the most widely spread dwelling types were the semi-detached and detached houses with an average floor area of 750 - 1,000 ft.^{2} and a garage/car park space within their curtilage. Very slowly the design was improving and the housing units were getting clearer and crisper. By early 1960's too, with the cost of land rising, the low density developments of only detached and semi-detached houses were out of the reach of all except the more affluent. It was only then that terraces (town houses) and flats became acceptable to both developers and public. The general image one gets from this greater variety of design of these new dwelling units, built from early 1960's onwards, is that of spacious 'day-rooms' with a relatively higher proportion of total floor area devoted to these than the bedrooms, by contrast to local authority house planning, where there is a greater uniformity in the allocation of space to day-rooms and bedrooms with kitchens in all cases having provision for dining and a satisfactory work sequence, although expensive fittings are absent. In the private sector dwellings, kitchens are too small for the equipment people need, with storage space insufficient or in the wrong place. These criticisms alongside with those on the size of the dwelling itself - which during the 1962-1974 period had an average floor area of 700 - 900 ft.^{2} - and better insulation are some of the improvements which we think should take immediate priority during the next decade.

On the whole housing standards of the working class and middle class dwellings have come together, reflecting a blurring of economic differences; while people today in Britain are well housed by international standards with 19 million of dwellings or more, of which nearly half have been built since the Second World War.

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APPENDICES:

I. HOUSEBUILDING PERFORMANCE - GREAT BRITAIN: 1919-1975, GRAPHS.

II. TYPES OF HOUSING STANDARDS.

III. THE MOST FREQUENTLY USED N.B.A. HOUSE SHELLS - PLANS.

IV. DWELLINGS FOR SMALL HOUSEHOLDS - PLANS.

V. THE MOST FREQUENTLY USED S.L.A.S.H. HOUSE SHELLS.

APPENDIX I

HOUSEBUILDING PERFORMANCE - GREAT BRITAIN 1919-1975, GRAPHS

i. Dwellings completed in England and Wales: 1919-1939.

ii. Dwellings completed in England and Wales: 1946-1976.

iii. Dwellings and households - England and Wales: 1946-1976.

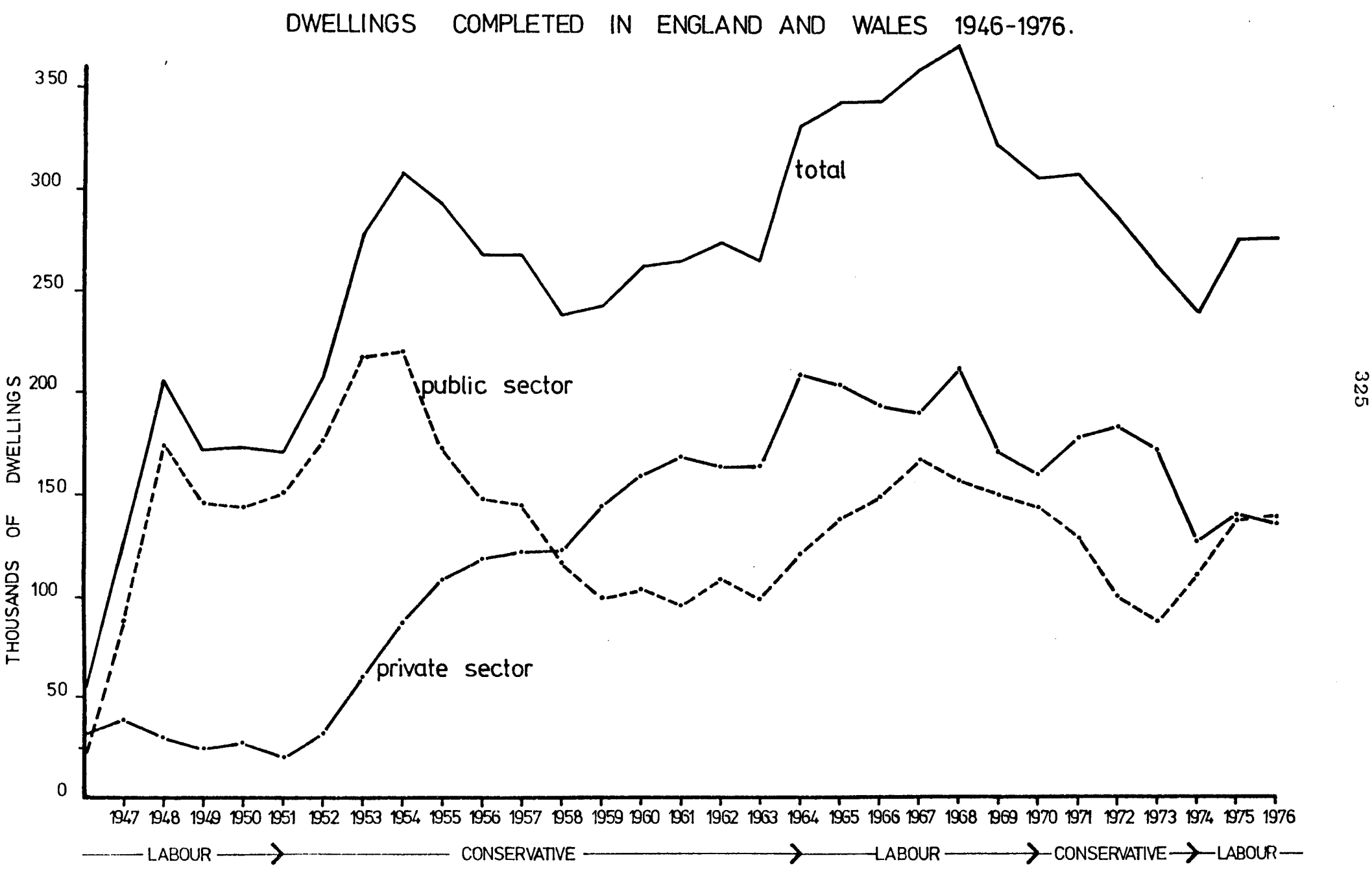
iv. Dwellings completed in Scotland: 1920-1939.

v. Dwellings completed in Scotland: 1946-1976.

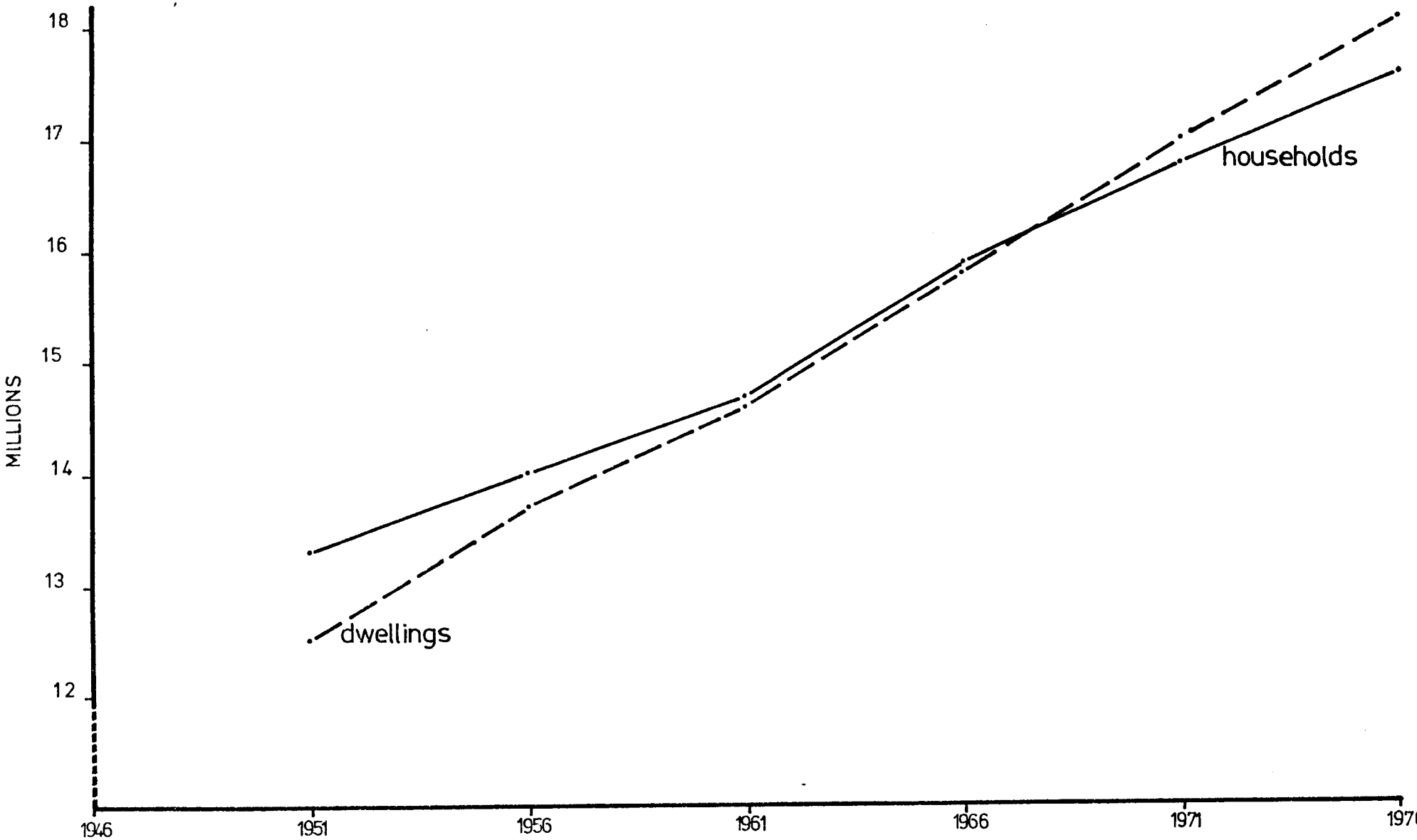
vi. Dwellings and households - Scotland: 1946-1976.

vii. Dwellings completed in Great Britain: 1946-1976.

DWELLINGS COMPLETED IN ENGLAND AND WALES 1919-1939.


DWELLINGS COMPLETED IN ENGLAND AND WALES 1946-1976.
THOUSANDS OF DWELLINGS
350
300
250
200
150
100
50
0
total
public sector
private sector
1947 1948 1949 1950 1951 1952 1953 1954 1955 1956 1957 1958 1959 1960 1961 1962 1963 1964 1965 1966 1967 1968 1969 1970 1971 1972 1973 1974 1975 1976
LABOUR
CONSERVATIVE
LABOUR
CONSERVATIVE
LABOUR

DWELLINGS AND HOUSEHOLDS – ENGLAND AND WALES 1946-1976.




DWELLINGS COMPLETED IN SCOTLAND 1920-1939.
THOUSANDS OF DWELLINGS
25
20
15
10
5
0
private sector
public sector
1919 1920 1921 1922 1923 1924 1925 1926 1927 1928 1929 1930 1931 1932 1933 1934 1935 1936 1937 1938 1939 YEAR
COALITION
C
L
C
L
NATIONAL GOVERNMENT
W W II