No. of % of Persons No. of Dwellings Estimated No. Required Additional Requiring Total Dwellings Total No. Population Period to overcome Annual to provide Private Households Requiring for Population Shortages Rate Required Dwellings Replacement Increase 1947 1,270,400 92.3 328,763 1947-55 1,470,000 91.9 385,980 56,500 17,500 16,000 90,000 11.250 50,000 10,000 1956-60 1,600,000 91.5 418,280 32,500 17,500 17,500 10,000 1961-65 1,730,000 91.1 450,240 32,500 50,000 1966-70 1,860,000 90.9 483,070 32,500 17,500 50,000 10,000 1971-75 9,800 1,990,000 90.5 514,560 31,500 17,500 49,000 1976-2000 112,500 9,600 2,500,000 90.0 642,860 128,500 241,000

Table 23 ESTIMATE OF ANNUAL RATE OF FUTURE DWELLING REQUIREMENTS FOR MELBOURNE

generally up to 50% higher than the costs of the more economical forms of low level housing and when costs of maintenance are taken into consideration, the difference is considerably higher.

With regard to Australia, Table 25 gives Victorian Housing Commission estimates of constructing various forms of housing in Melbourne during the first six months of 1952:

The estimate for 6 to 11 storey flats is not based on actual construction experience as the Commission has not yet built housing of this type. However, these figures indicate that the basic cost of constructing high level flats with elevators is about 30% higher per comparable housing unit than the more economical forms of single or two-storey housing. On the basis of existing costs, this amounts to some £700 to £800 per housing unit. To this must be added the additional cost of maintaining the high level flats. However, even if the minimum figure of £700 is taken as a difference in the basic capital cost of construction, this is found to be higher than the cost of installing services. Estimates of the overall cost of installing all essential services, including roads, water, sewerage, gas and electricity are given in Table 26.

In many instances the redevelopment of any large area with high level flats would involve resubdivision of the

Table 24

RELATIVE COSTS OF BRITISH HOUSING TYPES(1)

Type of Structure	Cost Factor	
Houses semi-detached	1.0	
Houses terraced — 2 storey	1.0	
Houses terraced — 3 storey	1.1	
Flats - 3 storey	1.2	
Flats $- 5/6$ storey with load		
bearing walls	1.4	
Flats — 6/10 storey	-1.6	

 Residential Density, by C. D. Buchanan and D. H. Crompton. Report on Proceedings, Town and Country Planning Summer School, Nottingham University, 1951. existing street system, in which case the net difference in the cost in rearranging services is only about £350 per unit less than the cost of providing new services in outer areas. As compared with this, the difference in the capital cost of the structure is at least £700 per unit and considerably higher if all maintenance costs are taken into account. Factors not taken into account in these calculations are the cost of land, the cost of transport and the cost of such services as garbage removal and postal services.

With regard to cost of land, the tendency is for the total cost per housing unit to decrease with an increase in the density of use of the land. In general, the greater the number of housing units on any block of land, the lower the overall cost per housing unit. However, when it becomes necessary to increase density by using high level flats involving elevators, the considerable increase in the cost of structure then causes the total cost per unit to rise sharply. From this stage on, the cost of land becomes a relatively small factor in the overall cost per unit.

Transport costs must be considered in relation to both the existing state of development and the future requirements of transport facilities generally. It is also necessary to consider the importance of cost of transport as a factor in determining the location and type of residence required by the majority of people. This aspect will be dealt with later.

At this stage it is merely a matter of establishing some relationship between the basic capital costs of building various forms of housing. It would seem evident that high level flats with elevators are considerably more costly both to construct and maintain per unit than low level housing, and that the difference in cost is greater than the cost of installing new services. Furthermore, it would seem that the most economical type of housing is some form of row, terraced or semi-detached housing.

It follows, therefore, that the economic rent for high level flats must be higher than the economic rent for the lower level forms of housing mentioned. This is important when considering the forms of housing suitable for redevelopment of the substandard housing in the low income industrial inner suburbs, where minimum rentals are required by most people living there. The most economic means of redeveloping these areas to provide for the present occupants is undoubtedly by some form of row housing which could comfortably rehouse the existing numbers on average residential densities of up to 50 persons per acre. But even this form of housing would necessitate considerably higher economic rents than are paid by the majority of households in these areas today.

This is not only common to Melbourne, but is a fact generally realised by all large cities throughout the world which have attempted to redevelop substandard living areas. The lowest possible economic rent for the cheapest form of new housing in Melbourne today is generally about three times the average existing rent in the majority of substandard areas. Many of the people in these areas would no doubt be able and prepared to pay higher rents for better housing; others would not. But the great majority would certainly find it difficult to pay rents anything like three times their present level.

Apart from the fact that high level flats would not be the most economic form of redeveloping the substandard inner areas, the question arises would high level flats provide the most desirable form of housing for the majority of people in those areas? On this point there is strong evidence to suggest they would not. Whatever the reasons, it is abundantly clear that most families with children want a house of their own. All surveys carried out throughout the suburbs of Melbourne substantiate this view.

During a recent survey conducted in the new Housing Commission flats in North Melbourne and Ascot Vale, where the first attempt has been made in Melbourne since World War II to rehouse people from substandard areas in flats, more than 50% of families interviewed disliked living in flats. These included not only families with children but also the majority of elderly couples who had been used to living in small houses of their own no matter what the condition. As with most other surveys on this subject, the people who liked the flats most were the young married people without children, especially where both husband and wife went to work. Lack of privacy, lack of home life, and higher rents were the chief objections with the others.

It seems clear, therefore, that high level flats would not provide for the needs of a high proportion of people living

T	able	25
	acre	

COMPARISON OF COSTS OF HOUSING TYPES IN MELBOURNE (1952)

Type of Housing	Cost per Square £	
Brick House	265	
Brick Pairs	258	
Brick Row Houses	245	
Walk-up 2 and 3 storey Flats	304	
6 to 11 storey flats with elevators	325	

Table 26

ESTIMATED COST OF INSTALLING SERVICES (JUNE, 1952)

Type of Work		Cost per Housing Unit
(a)	Complete new services for villa type	
	housing:	£600
(b)	Providing additional capacity in existing services to provide for high level flats:	£100
(c)	Rearrangement of existing services where resubdivision of existing street	
	system is involved:	£250

in substandard inner areas at the present time, particularly as many unskilled workers will continue to want to live in these inner suburbs where most of the unskilled jobs will always be found.

The following broad conclusions emerge from this analysis of the housing requirements of Melbourne:

- (a) The pattern of existing development makes it clear that the great majority of Melbourne families have a strong desire for single home ownership.
- (b) Despite this, there is at present a greater relative shortage of flats than any other form of housing and there is every reason to believe that an increasing proportion of future households will want to live in flats of all types.
- (c) The principal housing problem is rehousing the low income families at present living in substandard areas in the inner industrial suburbs, many of which are in need of redevelopment.
- (d) The most economical form of new housing for redeveloping such areas for their present inhabitants would appear to be some form of row housing supplemented by low level flats.
- (e) The substandard inner areas could be redeveloped for their present population in accordance with modern standards by a mixture of row housing and flats so as to maintain the average existing densities in those areas.
- (f) The more attractive inner suburbs favoured by those people in the medium to high income groups requiring flats would seem to offer the greatest scope for high level elevator flats.

Because of the variations in the density of land use between low level and high level flats, some conception of the area likely to be required for elevator-type flats is needed as a guide for purposes of detailed zoning. After allowing for a proportion of future flat-dwellers living in two- and three-storey flats and maisonettes, which would involve medium density development, it is estimated that about 750 acres should be zoned for high density development so that elevator-type flat construction could be encouraged in appropriate locations.