1. INTRODUCTION

Parking is an essential part of all vehicle trips, whether these are trips by private cars or by goods vehicles. The provision of parking is an integral part of planning for movement of traffic in the Central Area, and adequate parking of the right kind must be provided to ensure efficient functioning of the Central Area.

Parking in the Central Area must be considered in three broad types:

(a) Servicing parking: This provides for the essential flow of goods and materials in and out of development. This type of parking is essential to the functioning of the city.

(b) Short term parking: This provides mainly for shopping, customer and business parking, and must have high priority.

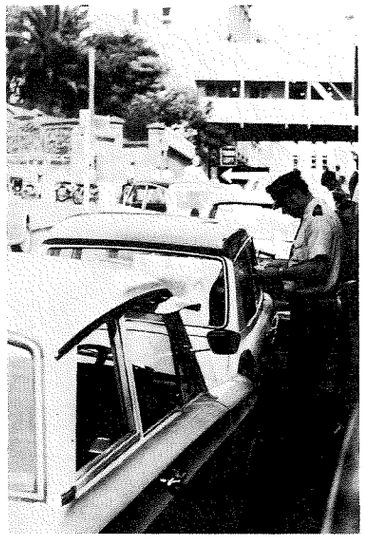
(c) Long term parking: This caters for commuter parking. This type of parking is the most flexible in location, and of the various types of parking has the lowest priority in the core area.

2. SURVEY SUMMARY

The provision and control of parking has been a problem in the Central Area for at least 30 years. Parking meters, to assist in rationing kerb space, were first installed in 1953, and the Council's first parking building was opened in 1958. There are now five parking buildings run by the Council, providing 3,145 car spaces.

2.1 Parking policy

At present, short-term parking is provided in an "inner" area (Fig. 78) by metered on-street parking and by parking buildings. In this inner area, development is not required to provide car parking, and the Council does not provide permanent commuter parking. In the outer area, development has to provide car parking to cater for both short-term and commuter parking generated by the development.



2.2 Level of parking

The most recent comprehensive parking study of the Central Area was that associated with the DeLeuw, Cather Transportation Survey in 1963. The parking available at that time is summarized in Fig. 77.

Fig. 77 Availability of parking

Type	Outer Area	Inner Area	Total
On-street	3,815	4,479	8,294
Off-street	6,308	8,215	14,253
TOTAL:	10,123	12,694	22,817
Long term	6,033	6,062	12,095
Short term	4,090	6,632	10,722
TOTAL:	10,123	12,694	22,817

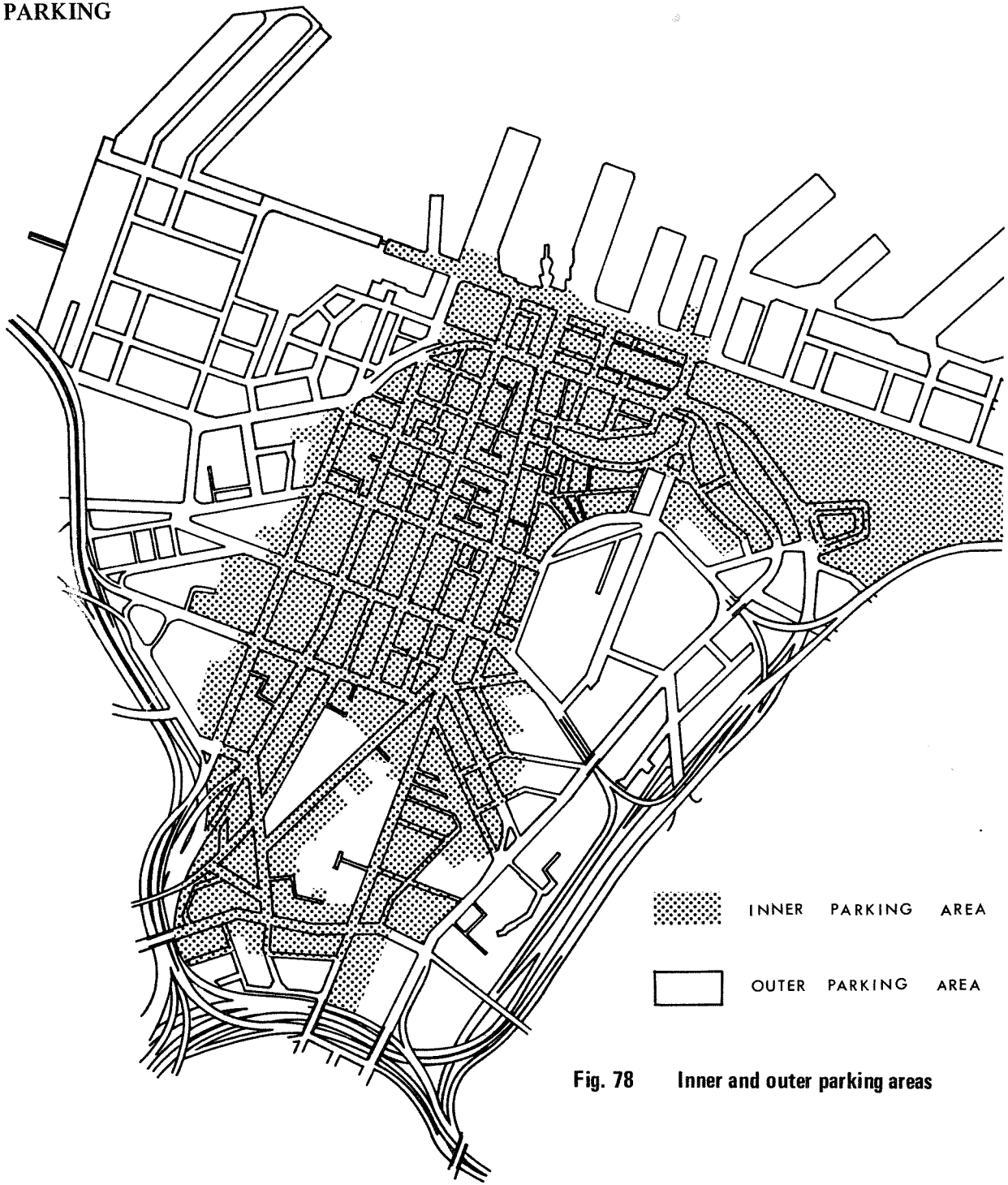


Fig. 78 Inner and outer parking areas

2.3 Trends

On-street parking is increasingly restricted to short-term use, especially in the inner area. This parking will be reduced as increasing traffic requires clearing of kerbside lanes.

In the inner area, there is a steady increase in both private and public off-street, short term parking. Parking buildings, in general, are only used to capacity for a few peak periods during the week, so it appears that the supply of parking is keeping in reasonable balance with the demand.

The most marked trend in recent years has been the increase in private off-street parking in the Central Area, largely to satisfy demand from tenants. Many new office developments endeavour to incorporate some parking for tenants, and the demand for this type of parking is such that a large private parking building has been built, to be leased for long term parking. The trend for private enterprise to provide long term parking in the core is expected to accelerate.

3. FUTURE PARKING PROVISIONS

3.1 The Central Area considered as two parts

In considering the future parking provision, the Central Area can still be considered in two parts:

(a) The outer area, where parking should remain required by Town Planning ordinances. This area is poorly

served by public transport and the intensity of development will be relatively low. Private cars will provide for the majority of commuters in this area, and long term parking can, and must be, provided by the developers. The existing parking ordinances are considered adequate and appropriate, provided the intensity of development remains at a low level.

(b) The inner area where, in general, development will be to a fairly high density. This area is well served by public transport. Due to the high density of development, the street system is heavily loaded with essential traffic, and non-essential traffic must be controlled.

In this area the Council has accepted the responsibility for the provision of short term parking and there are no parking requirements on developers. However, with the increasing demand for commuter parking in this area, it is economical for private enterprise to provide long term parking and this trend is expected to continue. The core area cannot take unlimited traffic and the commuter parking will have to be controlled to ensure that the non-essential traffic it generates in peak hours does not interfere with essential traffic.

3.2 Amount of parking to be provided

At present all available commuter parking in the Central Area is utilized. In order to retain a balance between parking and street capacity, the parking should be increased proportionately with the increase in street capacity.

Calculations show that, when the motorway system is completed, the capacity of the street system feeding the centre will be increased 75% above the present level. This, then, would allow an increase of 75% in commuter parking, or 9,071 parking spaces.

In off-peak hours the system does not at present run at capacity, and it is estimated that off-peak traffic flows on the arterials could be increased by 100% allowing a 100% or 10,722 spaces increase in short term parking. This would allow a total increase of 19,793 spaces, or a total of 42,610 spaces in the Central Area.

(The effect of this increase in traffic on the streets within the Central Area has not yet been fully assessed, and it may be that parking will need to be further restricted in both number and location due to congestion within the centre city. This cannot be determined until further computer assignments, at present being worked on, are finalised. The present calculations must be taken as preliminary.)

These projected increases, when applied to the existing level of parking as shown in Fig. 77, give future maximum levels of parking as:

Long term parking	21,166
Short term parking	21,444
Total future parking	42,610

3.3 Distribution of parking

The total parking provided must be distributed between the inner and outer areas. In the outer area, developers must provide parking. In this area, if the M.1, M.4, M.6 and W.2 Zones are developed or redeveloped to an average plot ratio of .66 to 1 (current average plot ratio of the outer area is about .50 to 1), 8,759 spaces would have to be provided. If the R.7 land is developed to a 2 to 1 plot ratio (200 to 300 persons per acre), 4,132 spaces would be provided. In addition, the University will provide 1,000 spaces. The parking in the outer area will be:

Off-street spaces	13,891
On-street spaces	3,000
Total	16,891

If the total parking for the whole area is to be a maximum of 42,610, then the allowable parking in the inner area is:

42,610 - 16,891 = 25,719

If the parking in the outer area is two-thirds long term parking (approximately the ratio found by the DeLeuw, Cather parking study) the long term parking in the outer area will be 11,266 spaces. As the total long term parking is assessed as 21,444 spaces, this would leave 10,178 long term spaces to be provided in the inner area. The total allowable parking in the inner area is assessed as 25,719 spaces, leaving25,719 - 10,178 = 15,541 short term spaces in the inner area.

The future parking situation may be summarized as:

	Outer Area	Inner Area	Total
Long term	11,266	10,178	21,444
Short term	5,625	15,541	21,166
Total	16,891	25,719	42,610

In the inner area, the short term parking required is 15,541 spaces. The short term parking available in 1963 was 6,632 spaces. Since then approximately 2,000 off-street short term spaces have been provided. It is anticipated that 500 on-street spaces will be lost due to traffic conditions. This leaves a requirement for 7,400 additional short term spaces.

The long term parking in the inner area is assessed as a maximum of 10,178 spaces. This area is 288 acres, so the long term parking provision in the inner area should be limited to an average of 36 spaces per acre.

4. PARKING PROPOSALS

4.1 Co-ordination of parking provision and operation

To ensure that traffic generated in the Central Area does not exceed the capacity of the street system, all parking in the Central Area must be in accordance with an overall parking policy. In order to achieve this, it is proposed that the location and amount of all parking, and the type of parking, whether short term or long term, public or private, be regulated

by the Council, and that further consideration be given to the most appropriate form of regulation.

Basic means of regulating future parking would include controlling the spaces to be provided by way of licence or ordinance. (An undesirable alternative would be to permit parking without regulation until the upper limit is reached, and from this time enforce a blanket prohibition on all additional parking.)

4.2 Servicing parking

In order to ensure that street operations are not impeded, servicing parking must be provided in full wherever feasible, and enforced for all new development. (See Traffic Management Proposals, page 108). The existing ordinances are generally considered to be satisfactory.

4.3 Outer area parking proposals

In the outer area no differentiation is made between provision of short and long term parking by developers. The ordinances require parking to be provided by all developers and the existing ordinances are generally considered adequate for the outer area, provided development remains at a relatively low intensity. It is therefore proposed that the parking ordinances in the outer area be generally retained, but that steps be taken to ensure that future development does not exceed an *average* plot ratio of .66 to 1.

4.4 Inner area short-term parking proposals

In the inner area, short term parking will continue to be provided by metered on-street parking and parking buildings.

An additional 7,500 off-street short term spaces will be required. These could be provided in part by private enterprise as, for example, the Farmers Trading Company building or the proposed Cross Street building, but if so, the location and operation must be in accord with the Council's overall parking policies.

(a) Amount and Rate of Provision:

The DeLeuw, Cather Report recommended that 7,000 additional public parking spaces be provided between 1962 and 1986. Since 1962 the Victoria Street, Albert Street and Customs Street West facilities have been constructed, and the Civic Centre underground carpark has now been approved for construction. This gives a total increase of approximately 3,000 car spaces by 1972 (the estimated completion date of the Civic Centre facility) which is maintaining pace with the DeLeuw, Cather estimates.

The DeLeuw, Cather recommendations are in agreement with the preceding calculations which indicate that an ultimate maximum of 7,500 spaces should be provided after the completion of the Civic Centre parking building, to match the ultimate capacity of the road and motorway system as currently planned.

It is therefore proposed that 7,500

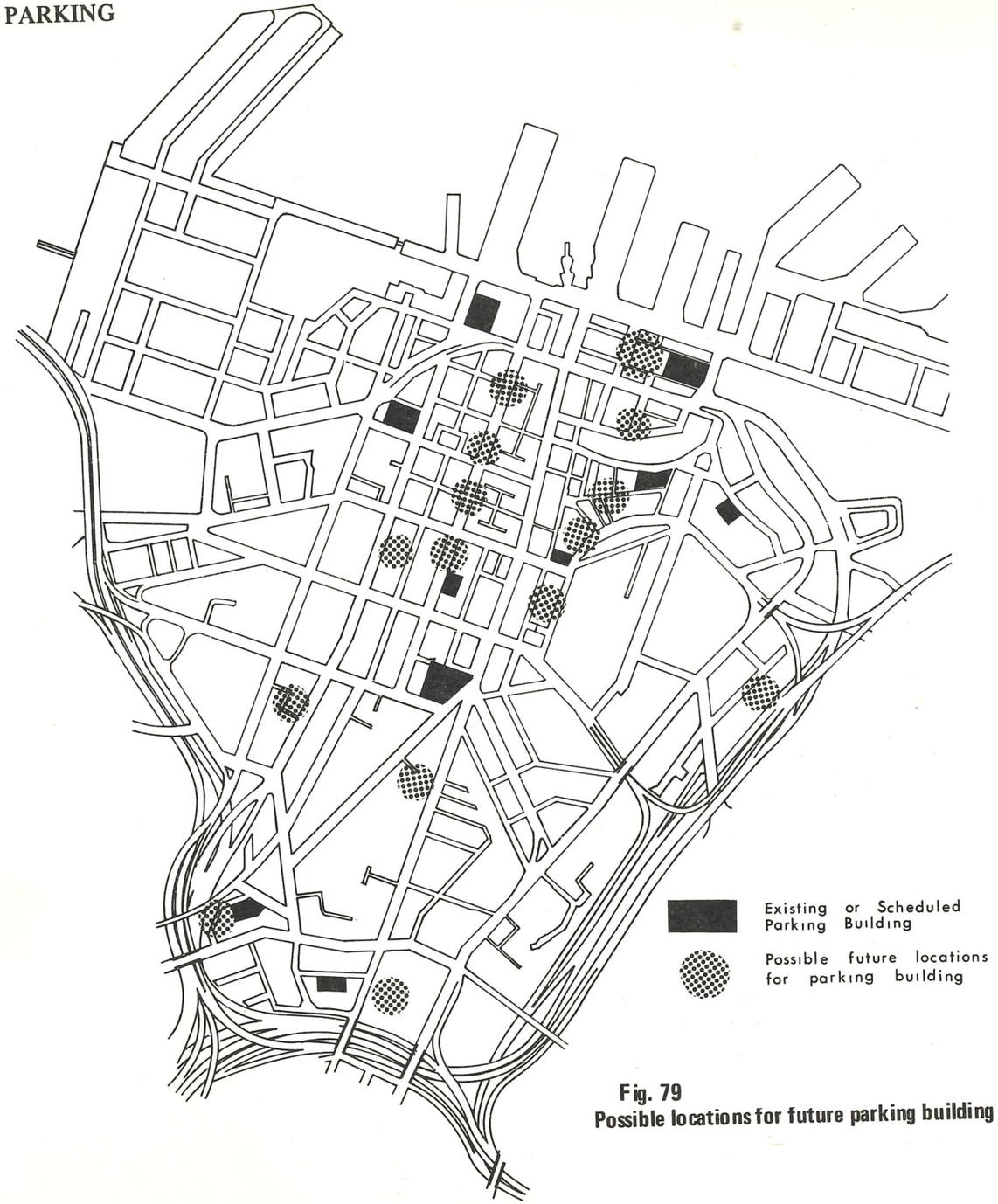


Fig. 79
Possible locations for future parking building

additional short term parking spaces be provided in the inner area, after the completion of the Civic Centre parking building, at the rate of 300 spaces per year.

To continue at this rate of development it will be necessary to provide a minimum of 1,500 additional spaces between 1972 and 1977 (five year period). The planning, site selection, land purchase, design and construction period for these facilities could be two years or more before the first one is completed, so it is important that this work is commenced immediately.

(b) Distribution:

It is generally proposed that future short term parking should be scattered around the inner part of the Central Area in small to medium sized buildings. Possible locations are shown in Fig. 79.

Only one alternative variation of this is proposed, that is the possibility of providing most of the parking on the eastern side of the lower part of Queen Street above a Kitchener Street extension (see Traffic, pages 103 to 105).

There are a number of areas of the city where there is already evidence of demand for additional parking, and where opportunities exist to develop suitable facilities (see Fig. 80). It is proposed that these areas be investigated to determine their

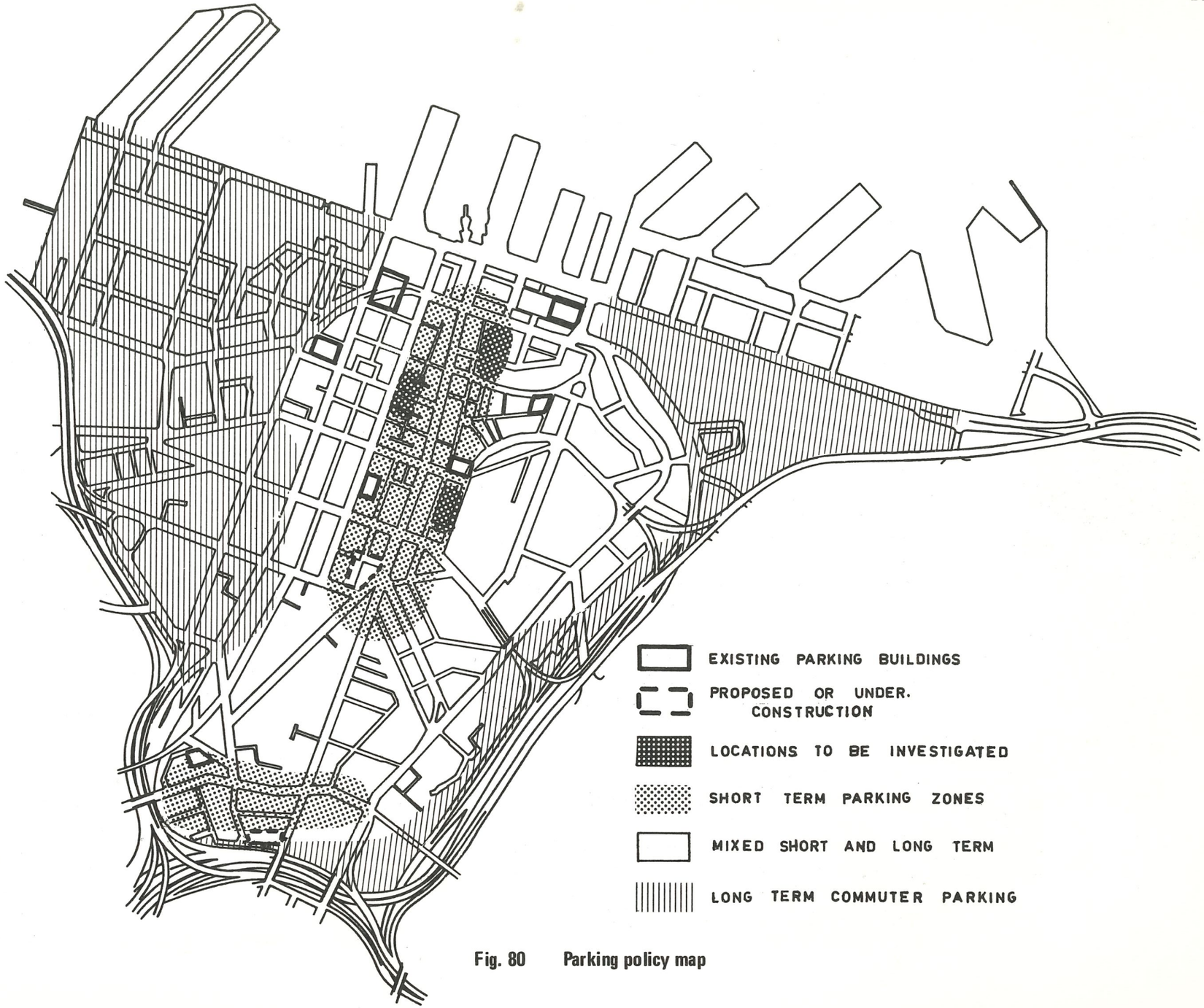
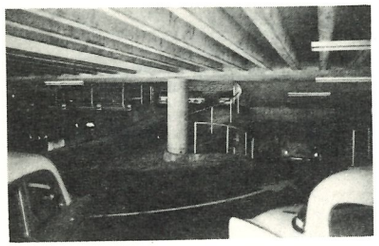


Fig. 80 Parking policy map



feasibility in more detail as the first step in the implementation of a five year programme for Council to provide a minimum of 1,500 additional car parking spaces in the Central Area.

4.5 Inner area long-term parking proposals

To avoid overloading the inner street system, the quantity and location of private long term parking must be controlled. The maximum allowable amount of long term parking in the inner area is 10,178 spaces, an average of 36 spaces per acre.

This parking cannot be uniformly distributed. In some areas adjacent to Queen Street access is poor and the streets are heavily committed for other functions. Long term or commuter parking must be kept to a minimum in this area. Further from Queen Street accessibility is better and above average amounts of long term parking could be permitted.

It is proposed that long term parking in the inner area be limited to an average figure of 36 spaces per acre, with each application considered on its merits.

4.6 General criteria for the location of parking

(a) Generally short term parking should be located closest to the core of the Central Area and all-day commuter parking located towards the periphery of the Central Area. (Fig. 80)

(b) Parking facilities should be closely connected to major elements of the roading network, so that traffic is not drawn through streets of inadequate capacity and conflict of movement is avoided, but should not be located directly on major traffic carriers where queuing at entries is likely to disrupt traffic.

(c) Parking facilities must be located in positions where they will not generate traffic movement likely to be detrimental to the movement of pedestrians and to environmental standards and qualities, either existing or proposed for any area.

(d) Parking facilities should be directly related to strong paths of pedestrian movement.

(e) As a general guide to the size of off-street parking facilities it is suggested that facilities of approximately 350-500 car spaces may be the most appropriate size.

(f) Parking facilities should be capable of physical adaption where necessary to accommodate desired changes in the type of parking to be provided, i.e. short term - long term.

(g) The form of a parking facility should not have any detrimental effect on its surroundings either by way of size, scale or general appearance.

(h) Encouragement should be given to the development of parking facilities as

part of a multi-use complex including the development of air space over parking facilities.

5. PERIPHERAL PARKING – PARK AND RIDE

In the past there have been suggestions that all or most of the parking to be provided in the Central Area should be located in the periphery, close to the motorway loop and connected to the core of the city with some high quality form of public transport. The intention would be to keep traffic out of the Central Area. This is not considered to be a realistic or viable proposal. The inconvenience caused to persons required to use such facilities would not be balanced by any real gain.

Firstly, there is not adequate vacant land available for surface parking. Parking buildings would be required, possibly built within the air rights over existing activities, such as above the railway yards. The cost of this parking would be close to the cost of parking within the core of the Central Area.

Secondly, on the basis of the traffic assignments made up until this time, the motorways and arterial streets leading to the Central Area can be expected to reach capacity before streets in the Central Area. Congestion problems will therefore occur on the motorways and arterials rather than within the Central Area. If the main intention is to improve pedestrian or environmental conditions in the Central Area, then this could be more directly achieved by closing or partially closing those streets where this improvement is desired.

The loss of convenience would be so great that a park and ride system could only be realistically proposed for commuters. To be successful, the transit service must give a good level of service - a frequent service, uncrowded buses and good travel times. The transit service could be provided by one of the existing services, or if a large parking area was created, a special service could operate. But again it is not considered that there is sufficient pressure on commuter parking to warrant any major facilities of this type at present. However, if suitable land becomes available its reservation for this use should be considered.

A specific case where this type of facility could be valuable would be the Harbour Bridge corridor. The bridge will reach capacity in 5 - 10 years. If a major parking facility was provided on the north side of the bridge, adequately served by a good bus link to the Central Area, congestion on the bridge could be reduced, and demand for parking in the Central Area eased.