1. SURVEY FINDINGS

There are approximately 2,000 buildings in the Central Area which, together, comprise more than 25 million square feet of floorspace. But overall the Central Area is not as built up as it may seem, as this floorspace is spread over close to 26 million square feet of buildable site area (i.e. the area of land in the Central Area excluding streets and reserves).

Development is concentrated in the Queen Street valley. Whereas most of the peripheral industrial areas have a plot ratio (ratio of floor area to site area) of well under 1 to 1, the Queen Street valley has an average plot ratio of 2 to 1. Some Queen Street blocks have a plot ratio of over 5 to 1, and some new buildings have a plot ratio of over 14 to 1.

Present redevelopment trends are for an exaggeration of this concentration of floorspace in the core of the Central Area. New buildings are larger than the ones they replace, and most of the largest buildings are being built in the Queen Street valley.

New buildings on highly valued land, especially in Queen Street, have been on small sites and have normally involved complete site coverage. Plot ratios have been so high that if the whole block were developed in the same manner, adverse environmental effects would result.

Most floorspace in the Central Area is at ground level. Percentages of the total decrease from 40% at ground level to 0.01% at the 11th floor level. New buildings have had the effect of adding proportionately more floorspace at the higher levels, and to date buildings have reached 17 floors above ground.

Most of the buildings in the Central Area are old buildings. Twenty-five percent were built prior to 1900, 40% between 1900 and 1930, and 35% since 1930.

Most of the older buildings are obsolete in terms of fire and earthquake resistance. Most older buildings would suffer structural collapse in a fire, and two-thirds of the Central Area buildings were built before earthquake construction by-laws were introduced in 1935.

Otherwise, Central Area buildings are generally in reasonable condition. A "knockoverability" index prepared for Central Area buildings in 1966 (an index taking into account age, condition and economic factors) showed that comparatively few sites required redevelopment. Many of these sites have been redeveloped in the interim. Sites requiring redevelopment tend to occur in clusters, which provides the opportunity for the redevelopment of fairly large areas at one time.

Older buildings may also be obsolete in terms of space and lighting standards for today's requirements. However, many have been converted with varying degrees of suitability for the uses to which they are at present put (e.g. old houses are being used as offices, doctors' surgeries and warehouses - warehouses are being used as offices - old shops are being used as industrial premises).

In the last ten years, redevelopment has

proceeded at a rapid rate, many building projects have been large, requiring site amalgamation (e.g. the University, the City Markets, and the current Auckland Harbour Board "Downtown" redevelopment project).

Redevelopment is likely to continue at a faster rate than the physical need for redevelopment will arise (i.e. the need considered apart from earthquake or fire risk.) The demand from businesses seeking Central Area floorspace, prestige, the need to make economic use of highly valued sites, and the anticipated capital gains due to increasing valuation of properties, will be the major determinants in the rate of rebuilding.

In the six year period between 1964 and 1970, there has been a gain of 2.07 million square feet (9%) in the total floorspace in the Central Area. It is estimated that up to a 27% increase in Central Area floorspace could be required by 1996 to accommodate an estimated 40% increase in employment. (Most of the increase in employment will be for office and service workers, whose space requirements, even when allowing for improving standards, are lower than most other Central Area workers). More specifically, the low and high estimates for the additional floorspace required after 1970 are:

1976 - between 2 and 3 million square feet
1981 - between 3 and 4¼ million square feet
1996 - between 5 and 7 million square feet

Additional floorspace will be provided in a mixture of small and large developments. Findings from the landuse survey suggest that most added floorspace is likely to be in large developments (over 80,000 square feet and over 10 floors high) in the heart of the city.

For purposes of illustration only, the number of additional buildings of equivalent size to the City Administration Building necessary to provide the projected increases in floorspace is as follows:

1976 - between 13 and 19
1981 - between 19 and 24
1996 - between 32 and 43

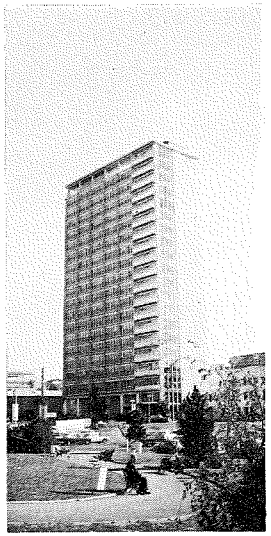
2. DEVELOPMENT RELATED TO ACCESS

In principle, the amount of development in the Central Area must be limited to match the access that can be provided to it.

However, it is always possible to increase access to the Central Area by providing additional public transport or traffic facilities.

By world standards, Auckland is a small city, and it must be at least theoretically possible for the centre of Auckland to grow to the size of that of Sydney, London, or New York. But technology and life styles are changing. What may have been appropriate for one city at one time and place may not be appropriate for another. The large expenditure of public money necessary to provide additional access to the centre of the city must be related to the benefits. Under some conditions it may be justifiable to limit the growth of a central area.

It is projected that, at the most, there



will be a 40% increase in employment in the Central Area by 1996. On completion of the motorways as currently planned, roading capacity to the Central Area will be increased by approximately 75%. Assuming public transport usage stays constant, the total possible number of peak hour commuters will be increased by only 30%. However, if public transport can increase the total number of commuters by a further 10%, it will be possible to provide adequate access for the highest projected growth of the Central Area for 1996.

The timing, costs and effectiveness of possible improvements to the city's public transport are currently under study by a Technical Advisory Committee made up of officers of the Ministry of Works, Auckland Regional Authority and Auckland City Council, in connection with the current rapid rail transit proposal.

3. DISTRIBUTION OF DEVELOPMENT

3.1 Desirability of spreading development

The limited development projected for the next 20 to 30 years should not be concentrated at high intensity on a few sites which happen to redevelop first, but should be spread over a greater number of sites at a lower intensity for the following reasons:

(a) To redevelop a greater number of obsolete buildings, and buildings which are fire or earthquake risks.

(b) So that more of the Central Area can be redeveloped to provide better pedestrian linkages, off-street servicing, and other desirable features proposed in this plan.

(c) Lower intensity of development permits more sun, light and air to be retained in streets and other public places.

The maximum projected increase in floor area for 1996 would result only in an additional one storey of development over 20% of the buildable area in the Central Area.

Even if all of this projected redevelopment were to be contained within the Queen Street area (from Quay Street to the Civic Centre, roughly between High, Lorne and Elliott Streets and Mills Lane) the result would be to increase the average height to a total of only from ten to twelve storeys.

It is not possible to calculate with accuracy what amount of development should be permitted in particular parts of the Central Area in order to achieve a desirable degree of redevelopment, but it is clear that the effective plot ratio of 10 to 1, as currently permitted, is too high to obtain a desirable distribution.

3.2 Criteria for distribution of development

The highest plot ratios should be in the most accessible parts of the Central Area, i.e.:

(a) in areas having the highest pedestrian counts;

(b) in areas well served by public transport;

(c) in areas well served by short term parking;

(d) in areas having the highest unimproved valuation (in that this valuation generally reflects accessibility).

The average length of a walking trip within the Central Area is approximately 800 feet. Most land currently zoned commercial in the Central Area is within reasonable walking distance of public transport and parking. It is also of a reasonably compact area which permits pedestrian interconnection between different parts. Land which does not have good accessibility includes the railway yards, Anzac Avenue, and land to the west of Vincent Street.

Karangahape Road may or may not have good accessibility. This is dependent on the introduction of the rapid rail and the location of stations in the Central Area. Just over half of the buses are currently routed along or close to Karangahape Road, but if most of these buses are to connect onto a rapid rail line, and no station is provided to serve Karangahape Road, then Karangahape Road would not be particularly accessible.

It is aesthetically desirable that high buildings should be located on the ridges, so that they make the greatest visual impact, and emphasize the city's topography (see Fig.15). This would imply a high plot ratio on the ridges. However, the highest buildings are already in the valley, and all the other criteria discussed above indicate that the highest intensity of development should be concentrated in the valley. Most of the Symonds Street ridge has already been developed for the University. Although it is possible for high buildings to be sited along Karangahape Road and the Hobson/Nelson Street ridge, it is not possible to reconcile the objective of locating all high buildings on the ridges with the existing situation and with other objectives which must be taken into account.

4. DEVELOPMENT AND CLIMATE

Auckland's climate is not severe, although the summer can be hot and humid enough to be uncomfortable, and the winter cold. In the cooler months it is pleasant to walk in the sun, but wind can increase discomfort. In the hotter months it may be preferable to walk in the shade, and a good breeze is appreciated for its cooling effect.

The total annual rainfall is not particularly large, but the weather is showery and unpredictable. Verandahs, which have traditionally sheltered the pavements of the main commercial streets from both wind and rain, are considered to be particularly desirable, even though they shade the pavements. They are a requirement under the new ordinances, but they have not been a part of the architectural styling of recently constructed prestige office buildings. As a result, on some corners, people now have to wait in the rain for the lights to change.

Auckland is a windy city, and the intention must be to avoid forms of development which

funnel wind down canyon-like streets, or otherwise create windy conditions in pedestrian places. Wind velocities are increased around the base of isolated tower blocks.

Queen Street is orientated slightly east of north, which means the sun shines down along the street at midday. However, the development of larger buildings along Queen Street would reduce the time the sun could stay in the street (see Fig. 6).

On the other hand, Karangahape Road runs roughly east and west. The northern pavement is always in shadow, whereas the southern pavement has sun all day. As in Queen Street, the sunnier side records the largest pedestrian flow.

A sunny shopping street is not essential, but it is certainly desirable, and new development should be designed to ensure a reasonable amount of sunshine and daylight is retained. Also, there should be places where people can go to stand, sit or lie in the sun, as they now do in Albert Park. Care must be taken to ensure that the sun is not blocked from these special places.

Besides affecting environmental conditions in the streets and other outside spaces, buildings also affect each other. Present ordinances safeguard the amount of daylight that reaches the street, but do nothing to protect the amenities of neighbouring buildings. Most of the large office buildings recently constructed in Queen Street have located on corner sites, so that at least the two street walls can be glazed without fear of being

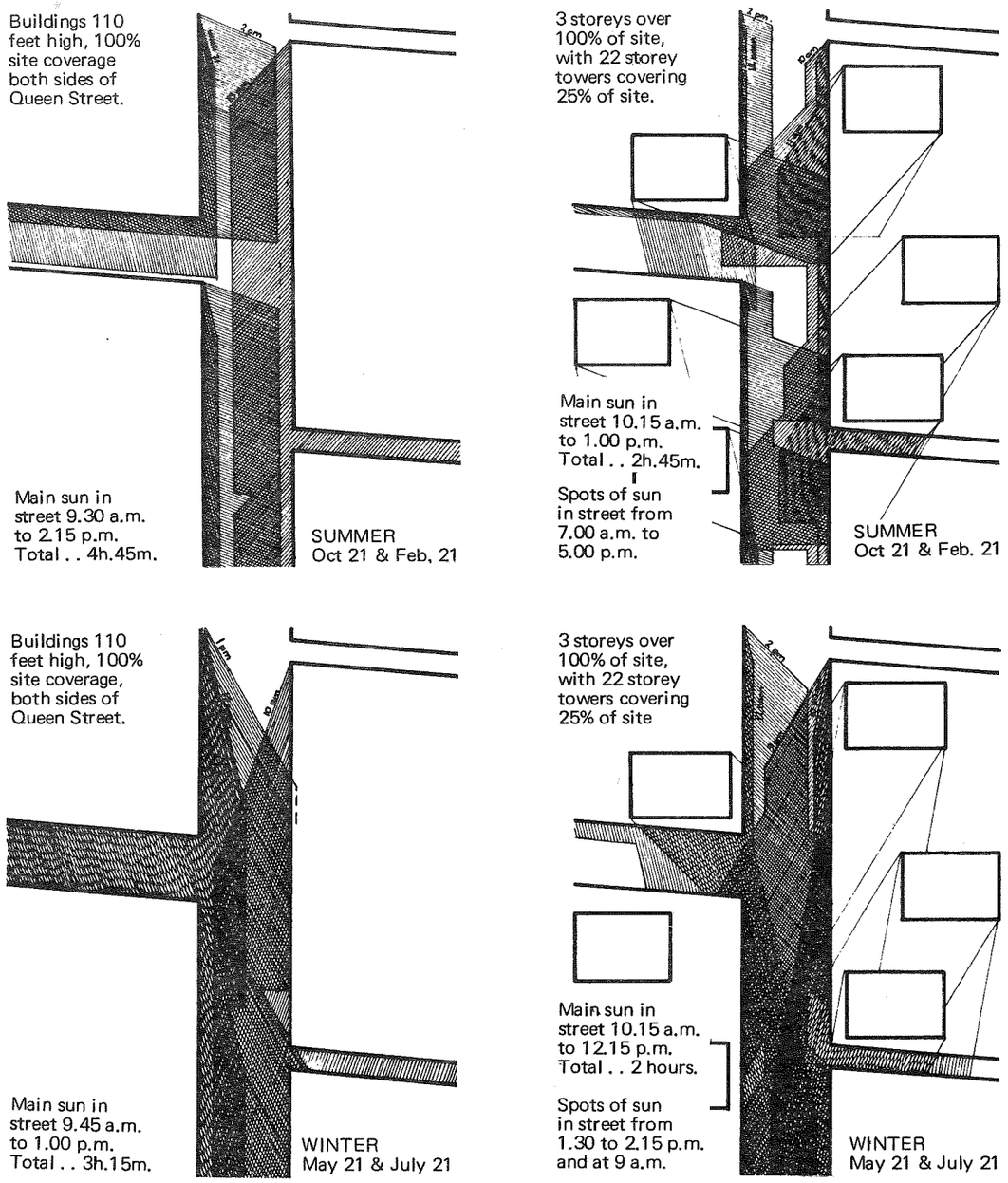
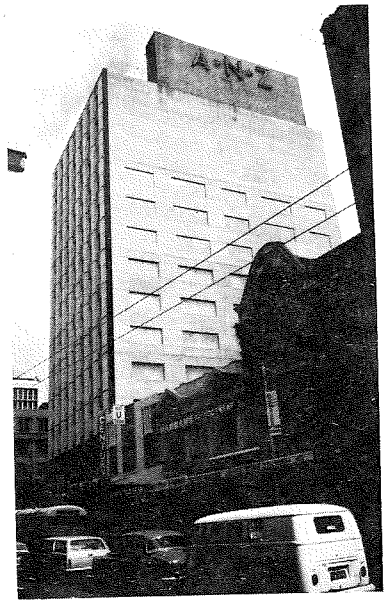
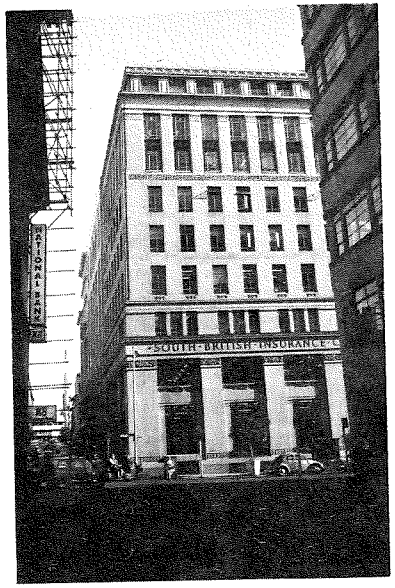


Fig. 6 Shading in Queen Street





built out by a neighbouring building. There is a limit to the number of favourably located corner sites, and as offices with poor outlooks do not command favourable rentals, it is essential that ways be found to ensure that buildings can be built in the middle of a street block without loss of amenity and rent from future neighbouring buildings.

The trend is for the built environment to be separated and insulated from the outside environment. Air conditioning permits windows to be permanently closed. It is, of course, possible to light artificially interior work spaces, and therefore it is not technically necessary that buildings should have windows.

While activities such as parking, warehousing and shopping may not need windows, it is considered essential that offices and residential buildings should have windows with a reasonable outlook, so that their occupants can at least retain visual contact with the outside world.

5. FORM OF DEVELOPMENT

Development within the Central Area must be directed so that it provides the best possible conditions for the people in the Central Area, whether they be in the streets or other public places, or the buildings themselves.

The following sketches illustrate possible types of future development under existing and proposed controls, based on a hypothetical Queen Street block.

(a) Present Development: (Fig. 7)

* Most development made up of old buildings, some as low as two or three storeys.

* Buildings virtually cover the whole of their site.

* "Architecturally treated" facade to street only.

* Few windows on walls other than those facing streets. Some windows to light wells or yards, often dark, dirty and dank.

* New building located on corner to obtain at least two window walls.

(b) Full Development Under Present Ordinances: (Fig. 8)

* Ordinances permit development over whole of site to a height of 110 ft., provided top floors are set back behind a plane at an angle of 65° to the centre of the road.

* Result is a very uniform form of development - flush facade to street - canyon-like effect.

* Only windows are to the streets - vast bulk of floorspace would be without windows - undesirable and sub-standard office space, which would mean uneconomic development because of low demand and low rentals for such space.

* Light to street ensured by 65° angle control, but no sun in street for most of day.

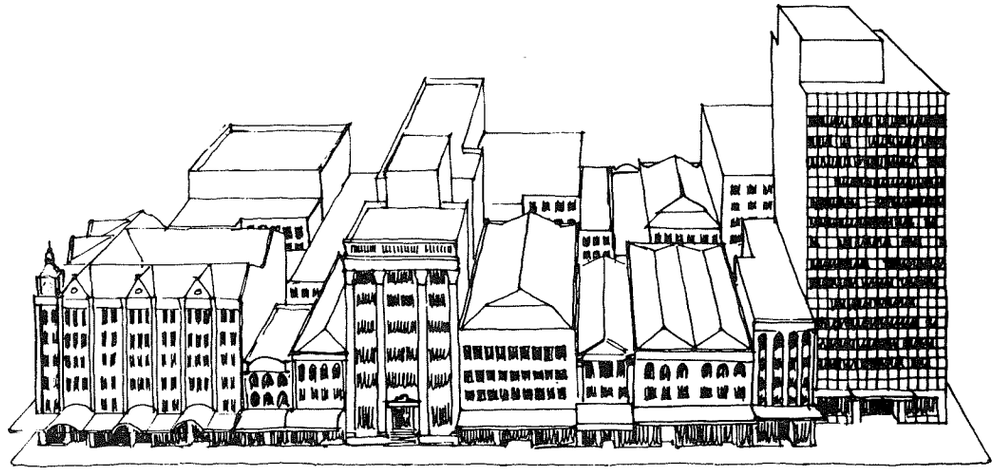


Fig. 7

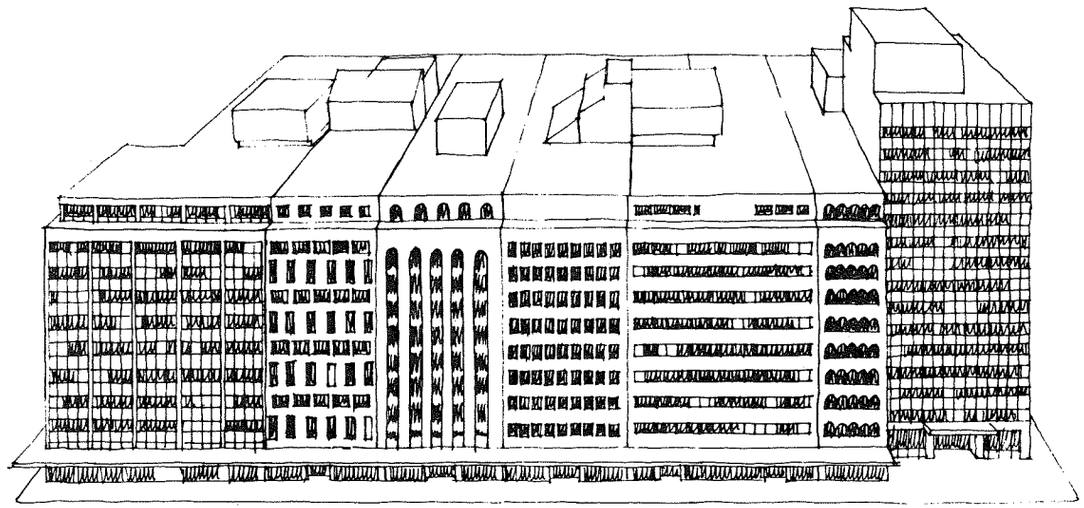


Fig. 8

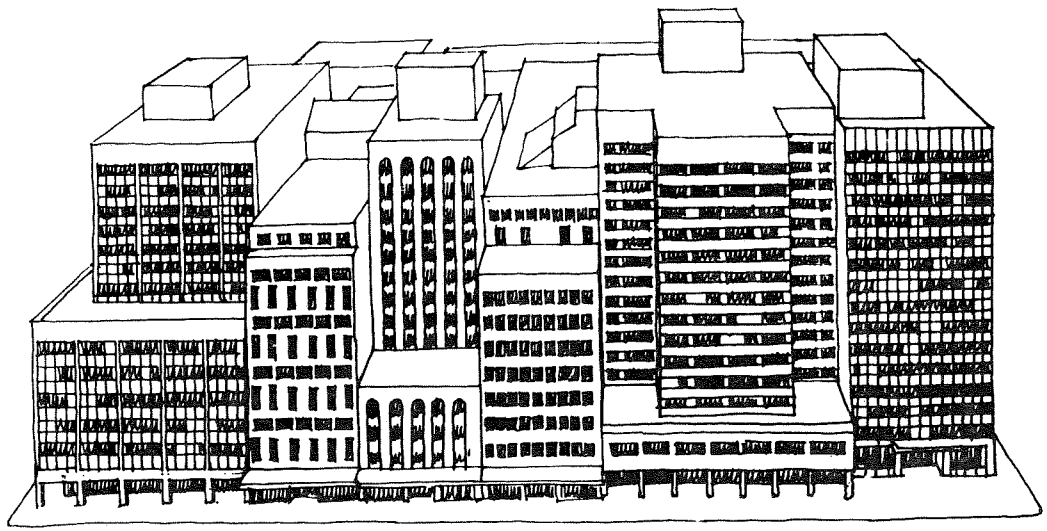


Fig. 9

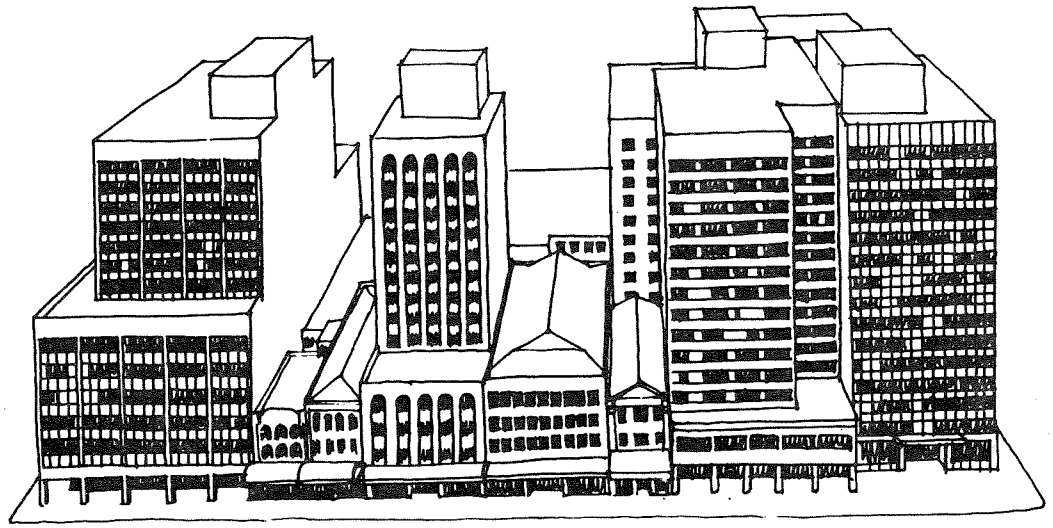


Fig. 10

(c) Full Development where waivers are permitted to Present Ordinances: (Fig.9)

* The 110 ft. height restriction has been waived for the largest recent developments in return for the provision of set-backs, pedestrian areas, or other amenities.

* Resultant development only marginally better than if present ordinances were strictly applied. Problem of windows to offices in middle of block not solved.

* Because buildings are higher, there would be even less sun in street than if present ordinances were strictly applied.

(d) Partial Development where waivers are permitted to Present Ordinances: (Fig.10)

* While a block remained only partially redeveloped, sun would be able to shine into the street between buildings.

* Problem of windows in walls other than those to the streets is not solved - windows cannot be provided in walls on boundaries between sites without the possibility of their being built out. (Note: By-laws may permit up to 10% of wall on the boundary to an adjoining site to be glazed where lower building on adjoining site is of fireproof construction).

* Light wells or set-backs can be provided for windows, but their outlook is still likely to be blocked by a future large building.

(e) Desirable Form of Development: (Fig. 11)

* The most suitable form of development is considered to be that of suitably located towers set on a podium of two or three floors having full site coverage. The towers need not be restricted in height.

* Activities which do not require windows, such as shopping and storage, would be located in the podium or the basement.

* Activities which require outlook, such as offices, would be located in the towers.

* No high development should be built over more than 50% of the site area above podium level. The open space on the site, together with that of neighbouring sites, would be used to obtain outlook from the towers.

* The spaces between the towers would permit patches of sun in Queen Street for most of the working day (see Fig 6).

(f) Desirable Flexibility: (Fig. 12)

* It is considered undesirable to replace one stereotyped form of development with another. Provided it can be shown that a proposed development performs equally as well as towers on a podium with regard to light and sun in adjoining streets, and outlook for adjoining buildings, then such a development should be permitted.

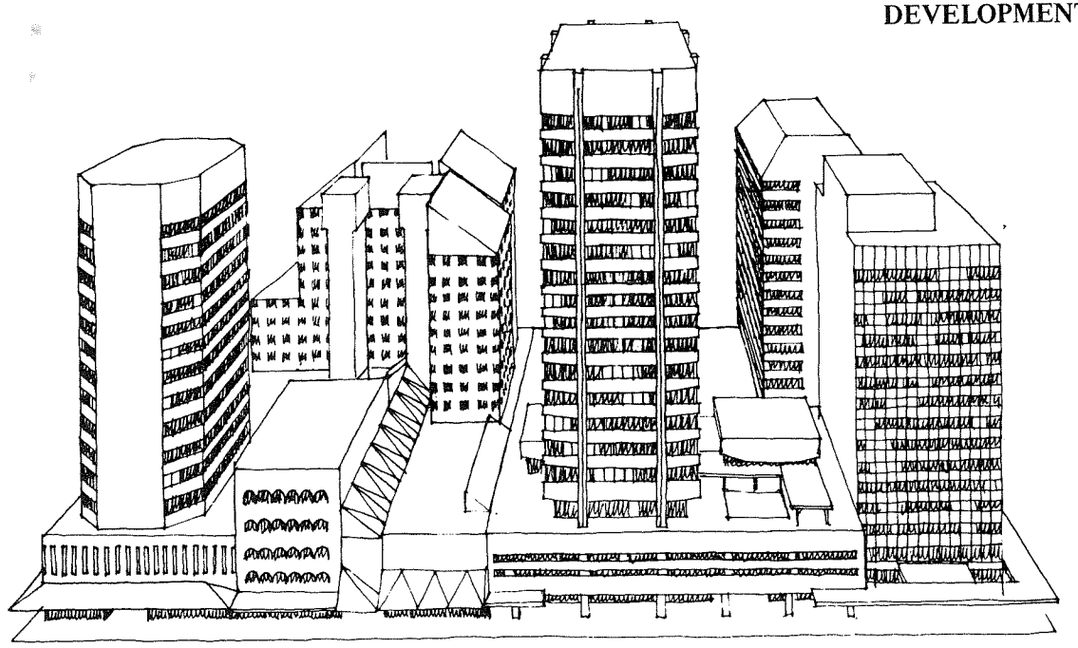


Fig. 11

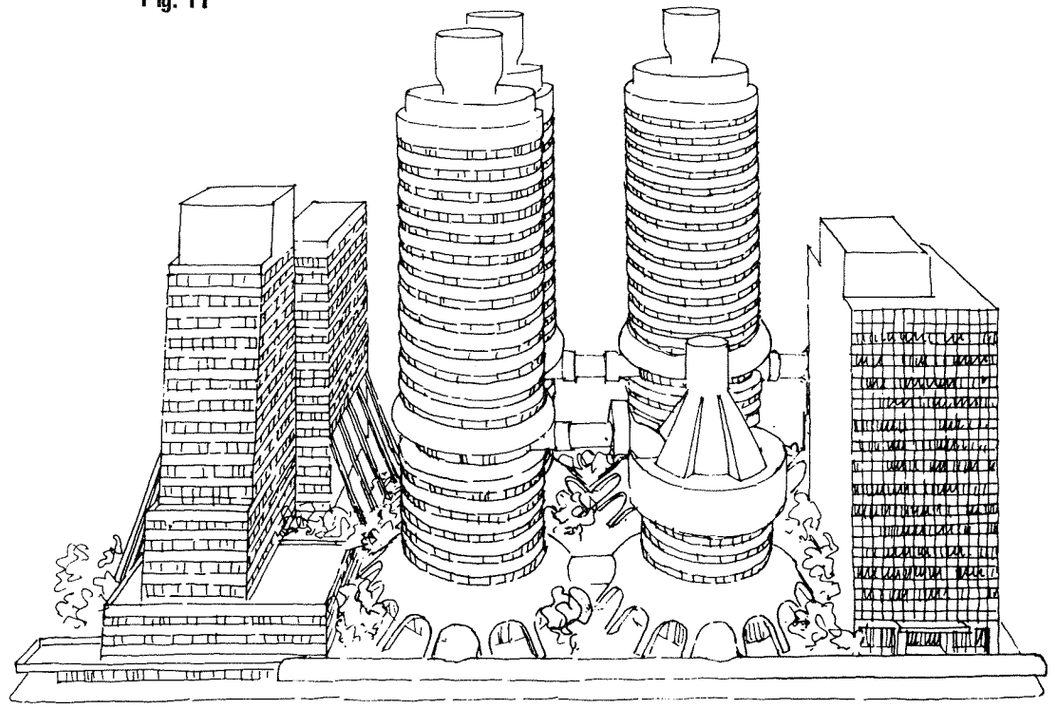


Fig. 12

* Flexibility is also required for buildings such as department stores or parking buildings, which may not be practical in a tower on podium form of development.

6. PROPOSED DEVELOPMENT CONTROLS

6.1 Controls based on plot ratios

(a) It is proposed that the bulk and location ordinances be based on plot ratios.

(b) It is proposed that there be basic plot ratios for different parts of Central Area, which would be highest in the main part of Queen Street and lowest in peripheral areas or areas having poor accessibility by public transport. (see "Parking")

(c) It is proposed that the basic plot ratio should be lower in narrow streets because of the greater problem of retaining satisfactory light and sunshine into narrow streets, and the more limited capacity of the pavements in narrow streets.

(d) It is proposed that the basic plot ratio should be considerably lower than the present effective plot ratio of 10 to 1, so as to spread the limited amount of future development over a greater area to redevelop a greater number of obsolete buildings or buildings which are fire or earthquake risks, and also to minimise the adverse effects of future development on adjoining streets and neighbouring buildings by limiting the total development on any site.

(e) It is proposed that there should be plot ratio bonuses permitted for desirable forms of development, such as towers on podiums, which allow for outlook from adjoining towers, and light and sunshine into the streets. The podiums would offer shelter from, and tend to reduce, the high wind velocities created at the base of tower blocks.

(f) It is proposed that there should also be plot ratio bonuses permitted for developments which provide desirable pedestrian linkage facilities or other amenity areas. (see "Environment & Pedestrians")

(Note: Bulk and location ordinances based on the above proposals would be similar to the new ordinances which have now been upheld by the Appeal Board. The basic plot ratio in Wellington for streets over 68 feet in width is 5.68 : 1. A plot ratio of up to 7.533 : 1 is permitted for a tower on podium type of development. In comparison, the plot ratio in London is 5 : 1. In Sydney it has recently been reduced to 10 : 1 with bonuses up to 12 : 1, and is now proposed to be reduced to 6 : 1 with bonuses up to 12 : 1. There has been no decrease in the rate of Central Area development following the reduction of the plot ratio in Wellington nor, it would seem, in Sydney.)

6.2 Places in the sun (Fig. 13)

It is proposed that there should be special

controls to ensure that places remain in the Central Area where it is possible to sit in the sun. Albert Park and the Civic Centre are two places where this is obviously desirable.

The precise form of such controls has not been investigated, but one possibility is that no building should be built above a plane set at a certain angle over the northern, or possibly eastern or western sides of such places.

Places to be considered include Albert Park, Myers Park, the Civic Centre, Karangahape Road, Queens Wharf, Vulcan Lane, Emily Place, St. Patricks Square and Queens Square.

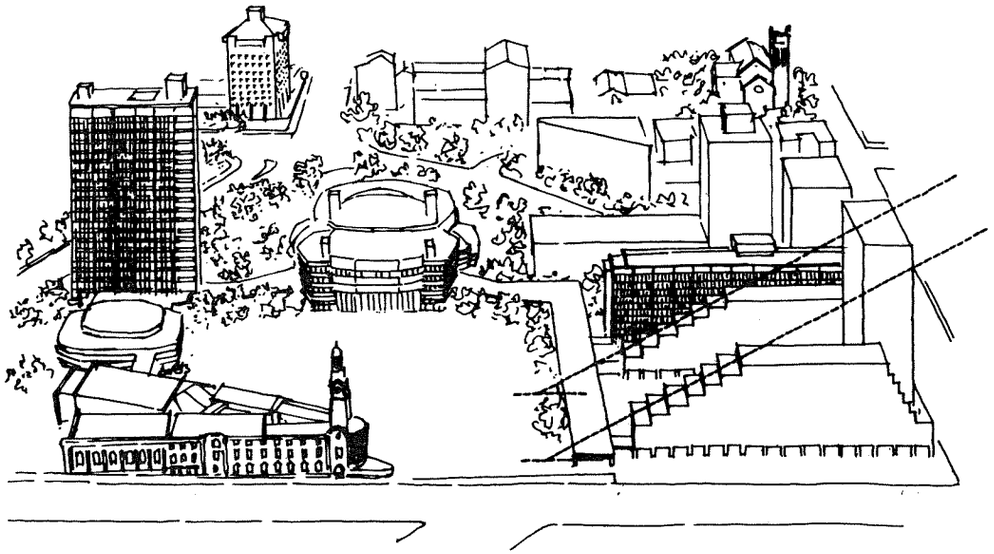


Fig. 13 Places in the sun

6.3 Taxation advantages

It is proposed that consideration should be given to removing any taxation advantages which currently occur for the rehabilitation of older buildings as compared with the construction of new buildings, where the older buildings are not brought up to present day earthquake and fire construction standards.

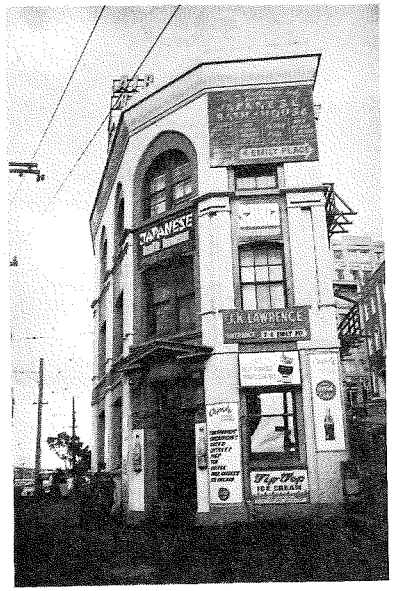
In some cases, old buildings have been so extensively renovated as to approach the cost of new buildings. The By-laws permit alterations to old buildings which do not weaken their earthquake resistance, but as yet they do not require that the existing building be strengthened to meet present day earthquake requirements. Steps are being taken which could require such buildings to be made more earthquake resistant.

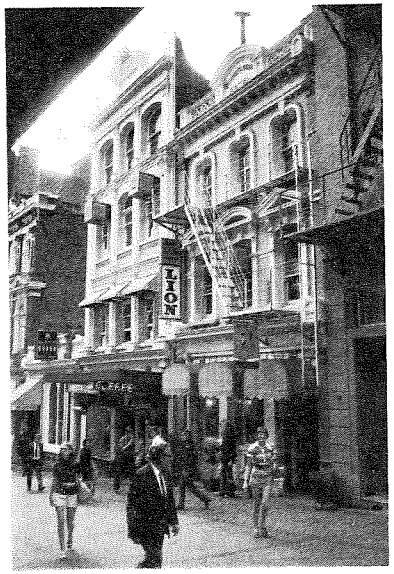
6.4 Amalgamation of sites

In addition to encouraging site amalgamation, it is proposed that the Council use its powers to require amalgamation of sites under the Town & Country Planning Act, at its discretion, where a more desirable form of development would result from such site amalgamation.

6.5 Use of air rights

It is proposed that the Council should permit and encourage developers to acquire air rights over low buildings on adjoining properties, so as to use these air





rights in lieu of set-backs or side yards for the purpose of obtaining daylight and outlook to office towers.

It is also proposed that, if necessary, the Council use its powers under the Town & Country Planning Act to acquire air rights over adjoining buildings for the development of major projects.

6.6 Verandahs on main pedestrian streets

Similar provisions to those now contained in the Code of Ordinances should be retained to require verandahs to be constructed over footpaths in streets having the greatest pedestrian use.

6.7 Historic buildings

It is most important that buildings of major historic interest should be preserved. This objective can be difficult to reconcile with the objective to re-develop buildings which are earthquake or fire risks. Proposals for the preservation of such places are to be found in a further section (pages 41-44).