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"origin" of the
"central NS spine" concept.

PRINCIPLES REGARDING THE DIRECTIONAL THRUST OF
GROWTH OF OFFICE DEVELOPMENT AND WORKFORCE IN
THE MUNICIPALITY OF SYDNEY :

Strategic Cost/Benefit Implications on the demand and need
for public investment in infrastructure, with particular
reference to the redevelopment of Woolloomooloo, the Rocks
and Uptown Sydney

Real Estate Development follows public
investment in Accessibility

✓ One hundred and eighty three years of cumulative government
actions on the pattern and location of public investment in port
facilities, arterial roads, tramways and bus routes, commuter
and trunk railways, public utility services (particularly PMG
facilities), parks and gardens, expressways, the Sydney airport,
the tertiary education complexes, and government centre
activities, have reinforced the natural topographic and economic
geography of Sydney to produce a strong central lineal spine
business district.

✓ This now runs North-South from the Quay transportation
interchange, flanked by the Rocks and Opera House, down to
the Central Railway transportation interchange, extending South-
West towards the central technical education and university
complexes, and extending South-East towards the central show
and sports facilities.

The Northern axis of public investment in accessibility has
jumped the Harbour and extended certain metropolitan centre
functions to North Sydney and St Leonards, with a further
extension along the Pacific Highway and North Shore rail line
to Chatswood now emerging.

The Southern axis of communications investment extends to the Central Mail Exchange at Redfern due South of the GPO, and further south to the central metropolitan industrial zone of South Sydney and to the Airport. This southern thrust will be accentuated by the second port complex at Botany Bay. The strategic location and total rail accessibility of Redfern Station foreshadows a natural demand for a tertiary employment centre there, similar in some respects to what has occurred in North Sydney. ^{The proposal for the} The proposed TNT headquarters office building at Redfern is the first indication of this demand.

Sydney was a single-centred metropolis until the early nineteen sixties. Property investment in central place retail and office facilities followed public investment in infrastructure, particularly the pattern of rail and tramway investment.

Central office, administrative and retail activities grew within the central spine, squeezed between the Botanic Gardens - Domain - Cathedral-Hyde Park - Museum - Grammar School hillside barrier on the East, and the Darling Harbour Wharves - Railway yards - Markets barrier on the West. The Central Railway Station and Yards complex has in the past acted as a barrier on the South, but the future redevelopment of this complex could transform Central from a barrier to a node, comparable to that now at the Quay.

Meanwhile, while the Sydney metropolis was single-centred, it was built up by a radial system of tramways which extended continuous spurs or strips of secondary activities lineally along Oxford Street to a node at Taylor Square, along Broadway to a node at Grace Bros and the University, and along William Street to the Kings Cross node.

As a number of formerly central place activities, retailing in particular, rapidly decentralised to suburban nodes during the nineteen sixties, the Oxford Street, William Street and Broadway spurs, together with the Southern or Uptown end

dev also follows line of ~~as I~~ resistance
in land prices, existing PRs.

3:

of the central spine business district, became temporarily surplus to need for true central area activities.

The gradual evacuation of Sydney Cove as a predominantly port and warehouse area created a vacuum at the Northern end of the central spine, and the opening of the Quay Railway Station and Cahill Expressway, created higher accessibility in the Quay area than had previously existed. The combination of these two factors led to a boom in office building at the Northern end of the spine.

A similar vacuum had appeared Uptown, and along William Street, Oxford Street and Broadway, but has been temporarily slow to fill, because available investment in Headquarters business and administration has concentrated Downtown where ~~access is better~~ ^{environment is better} and where Harbour views are better; and for service professions and business in North Sydney where initially it appeared that parking was freely available.

The vacuum of Uptown has also been slow to be filled because of psychological inhibitions caused by decay and lack of prestige, because of lack of improved accessibility as was created at the Quay, reluctance of landowners to accept the decline in their relative values. However, ~~some development has been~~ ~~stimulated by the accessibility created by the Goulburn Street~~ ~~Parking Station and this shows again that development follows~~ ~~accessibility.~~

This review of the history of the development of the Sydney Central Business District shows that prior to the decay of the southern sector between Park Street and Central Railway, this area had previously developed relatively uniformly as a central spine between Central Railway and Circular Quay. This was due principally to the strong public transport system, trains and trams which provided equal access opportunities to most parts of the Central Business District.

tail core
has been
barrier

The opportunity for redevelopment at such a rapid rate contributed to the obsolescence of the southern end of the CBD, this having been relatively more intensely developed and consequently less attractive at that time to redevelop than was the extreme northern end which had previously tended to lag behind.

The decline of the southern end of the CBD is exemplified by the relative decline since 1958 in usage of Central Railway Station and to a lesser extent Town Hall and Museum Stations, compared with Wynyard, Circular Quay and St James Stations.

The fact remains that public infrastructure investment, existing and proposed, already is heavily concentrated up and down the North - South spine.

Large system of users.
street system
road transitway
parked car parks
West Districts.
Junction Down
in station

This investment consists in the Railway Stations - Quay, Wynyard, Town Hall, Central - Chalmers Street, Museum, St James, Martin Place, the North-South pattern of expressway distributors, Redfern Mail Exchange, etc. (what else?)

Benefit/Cost ratio higher.
Future infrastructure investment can most economically be concentrated so as to reinforce this North-South central spine.

~~Effective utilization of the transportation network requires minimum expenditure of public money.~~

Basic Strategy for City of Sydney

Planning for continued redevelopment within the City of Sydney can reasonably allow for an increased working population in the range 350,000 to 400,000 within the CBD; this projection being adopted as the most reasonable target or contingency of a number of projections based on different criteria over the next thirty years.

Examination of the distribution of existing office space within the CBD (generally bounded by Circular Quay, Hyde Park, Central Railway and Darling Harbour) and of the areas available for redevelopment, after allowing for preservation of a number of existing buildings, indicates that this area can quite easily

accommodate a workforce of over 400,000 at an average gross plot ratio of 10:1.

Having established that such a major increase in workforce can be incorporated in the existing Central City linear spine extending from The Rocks to Central Railway, it is necessary to determine whether reinforcing this spine is preferable to allowing another form of growth, which would incorporate intensive satellite office developments, such as Woolloomooloo.

Strategic Advantages of Central Spine Development

There are a number of very distinct advantages in continuing development of a strong linear city between Circular Quay and Central Railway. The principal advantage is improved access to the CBD with the least costs in additional expenditure for public transport.

Only two of the seven stations (six existing plus Martin Place) in the City railway system directly serve all suburban railway lines leading to the CBD. These are Town Hall and Central, the latter being the only station serving inter-urban trains from the rapidly growing outer areas, such as Gosford-Wyong and the Blue Mountains. Central Station, which is by far the largest station, in particular, has the capacity to handle a much larger commuter load than it now does. Substantial indirect relief would be given to other stations in the underground system through spreading the load on individual trains which would result from greater utilization of Central Railway Station. The extent of this relief would not be available by intensifying development at stations that do not serve all suburban railway lines.

In addition, bus commuters from the inner western suburbs would benefit from intensified development along a spine extending from Central Railway and Circular Quay, particularly in the long term following completion of the Western Distributor.

Development of the linear spine would also reduce road congestion particular due to traffic from the northern and western suburbs. Recognition that Woolloomooloo is less accessible than the Central Railway precinct for many potential rail commuters leads to the conclusion that a number of possible future Woolloomooloo office workers, particularly from the North Shore, would be diverted to other modes of transport, probably private car. As well as forcing more people to use private cars, instead of public transport, intensive office redevelopment of Woolloomooloo would adversely affect existing traffic circulation through the City of Sydney, during the next ten to twenty years pending completion of the Southern Expressway and other bypass roads to the west and southwest of the City of Sydney.

During this period the Cahill Expressway will continue to be a major bypass for north-south traffic. This will be intensified by such projects as Stage 1 of the Eastern Distributor (William Street underpass) and the proposed connection between the Southern Cross Drive and General Holmes Drive at Botany. Consequently, until superior bypass facilities are provided to the west of the CBD, it would be unwise to overload these elements of the Cahill Expressway and Eastern Distributor with large volumes of vehicles generated by office development in the Woolloomooloo area.

Another major factor in considering the relative impact of the intensive office development of Woolloomooloo and the southern end of the CBD is the effect on public utilities. Redevelopment of either area will necessitate some amplification of existing services. One of the most important of these in the CBD is delivery of information both verbal and written. The responsible authority (the Postmaster General's Department) has as part of its own strategic plan constructed a major mail exchange at Redfern to supplement the existing General Post Office and is investigating the feasibility of a special tunnel linking these two facilities to facilitate movement of goods and parcels between them.

Provision of this facility would provide a unique opportunity for other utility authorities to amplify their trunk services at a relatively lower cost than they might otherwise incur, particularly in areas outside the central spine.

As well as optimising public infrastructure costs, concentration of development within a central spine would provide a large number of advantages to the workforce within the area. The principal advantages would be greater pedestrian interaction and accessibility between the commercial, retail and entertainment areas within the central spine, and also between these areas and the flanking open space and perimeter parking stations. In addition, concentration of commercial development within the spine would allow residential development within close proximity with some residential areas being within walking distance.

Railway Stations

Redevelopment of the southern sector of the existing Central Business District will not necessitate provision of any additional railway stations in the City Underground Railway System within the next ten years. Ultimately, an additional station to serve the Institute of Technology in the Haymarket area will be required when that Institute is fully developed in about 20 years' time. But if a station went in, Uptown development would be accelerated. The potential parking problems likely to be incurred are such that public transport facilities serving the Institute will need to be strengthened. By the same time, redevelopment of the southern end of the CBD will be such that an additional outlet to serve this area, plus the Institute of Technology, would be justified. Such a station on the Eastern Suburbs Railway in the vicinity of Campbell Street, while not directly serving all lines, would be more effective than would a station at Woolloomooloo, particularly in the case of North Shore commuters.

Whereas development around Campbell Street and the Institute of Technology will proceed in any case, irrespective of a railway station at Campbell Street, the same cannot be said for Woolloomooloo. The extent of the development of Woolloomooloo particularly the section north of Cathedral Street and west of Forbes Street, will be largely dependent on provision of a railway station at Woolloomooloo. The area south of Cathedral Street and east of Forbes Street is readily accessible to the Kings Cross Station and to William Street.

A review of the operating characteristics of the Eastern Suburbs Railway Line indicates that if an additional station is to be provided between Chalmers Street and Edgecliff, the Campbell Street location would be preferable to the Woolloomooloo. The successful operation of the Eastern Suburbs Railway will be largely dependent on the travel time between the suburban stations and those within the Central Business District.

Review of Recent Developments

The State Planning Authority in preparing the Woolloomooloo Plan proposed guidelines for development to incorporate mixed commercial and residential usage. A base plot ratio of 5 to 1 was allowed with bonuses related to site amalgamation and open space, allowing up to an additional 5 to 1 making a critical maximum of 10 to 1. It was envisaged that in the areas developed as commercial, an average maximum ratio of 8.5 to 1 might be achieved and that a potential workforce of up to 35,000 persons, together with 10,000 residents might be provided for. This could have produced the same desirable effect as that planned for Circular Quay where definite limitations of height have been imposed to highlight the topography of the area.

However, it appears that site amalgamation will be such that the maximum plot ratio will prevail over the whole basin and that almost the entire area south of Plunkett Street be commercial, instead of mixed residential, commercial and tourist accommodation.

This has resulted in the potential maximum workforce being more than doubled to between 80,000 and 90,000 and also to the destruction of the visual accentuation of the topographic relief that might otherwise have been obtained.

As previously stated, a Woolloomooloo station would provide direct access to less than half of the nine railway lines that would serve the CBD following construction of the Eastern Suburbs Railway. The vast majority of rail commuters will be forced to change trains and this must have an adverse effect on the proportion that will travel by rail. This applies particularly to North Shore commuters for whom rail travel will be relatively more inconvenient than would travel by private car along the Warringah and Cahill Expressways.

A conservative estimate is that, with a workforce of 80,000, including 12 percent travelling by private car, about 7,000 car spaces would be required for commuters alone. It is not practicable to assume a smaller proportion and the modal split could be as high as 20 percent with a resultant demand for 12,000 car spaces.

However, stabilization of the workforce at about 35,000 could reduce the car parking demand to the range 3,000 to 5,000 cars which could be manageable, although the lesser figure would be desirable, if car spaces are to be provided for tourist residential and other uses, and also allow Woolloomooloo to provide some perimeter parking to serve the Central Business District.

Therefore, it appears that basic plot ratios higher than 2 to 1 should not be permitted except in a strip about 150 feet wide along the northern boundary of William Street, where a maximum of 10 to 1 could be permitted, and also in the block bounded by Plunkett Street, Dowling Street, Cathedral Street and Forbes Street; this block being owned by the Commonwealth Government and therefore not subject to Local Government Planning Ordinances.

As an incentive to residential development within the area covered

low
A Loo Plan
1,500 car spaces
side up of
500 Domain
500 Wharf area
500 Kings X Air
Rights.
000

3,000 in hoo

2 x 1	1000
2 x 3	1800
2 x 1	700
	<u>3500</u>

Chels
St
20

700.

500 could provide 3500 Council 800 for Kings X

PC
pl
check

office space (Commercial)

Alternatively allow ~~SPA~~ ¹⁰ bonuses for open space (2:1) & amen (3:1) but simply insist that no more than 2:1 of any dev be by a basic commercial plot ratio of 2 to 1, a bonus equal to the area of the area used for residential purposes, with an overall maximum plot ratio of 6 to 1, is recommended. *commercial offices*

These recommendations allow for a workforce of approximately 16,000 in the high density area along William Street and in the ~~Navy Department~~ ^{Commonwealth} block and 13,000 in the balance of the area south of Plunkett Street if the bonus clauses are not allowed. Inclusion of the bonus provisions could allow a commercial plot ratio of 4 to 1 and an increase in workforce from 13,000 to 26,000, thus providing a total workforce of about 42,000 in the area (together with a resident population of up to 10,000 persons. Although this exceeds the estimates anticipated in the original State Planning Authority proposal, it is not unreasonable as an appreciable percentage of residents are likely to be employed within walking distance in the Woolloomooloo/Kings Cross Area. *weak? how else can we save their face?*