



1969

THE PARLIAMENT OF THE COMMONWEALTH OF AUSTRALIA

PARLIAMENTARY STANDING COMMITTEE ON PUBLIC WORKS

REPORT

relating to the proposed extension of the

CITY SOUTH TELEPHONE EXCHANGE

Sydney, New South Wales

(Fifth Report of 1969)

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PARLIAMENTARY STANDING COMMITTEE ON PUBLIC WORKS

CITY SOUTH TELEPHONE EXCHANGE, SYDNEY

R E P O R T

By resolution on 15 May 1969, the House of Representatives referred to the Parliamentary Standing Committee on Public Works for investigation and report the proposal to extend the City South telephone exchange building, Sydney.

The Committee have the honour to report as follows:

THE COMMITTEE'S INVESTIGATION

1. The Committee received written submissions and drawings from the Postmaster-General's Department and the Department of Works and took evidence from representatives of these departments at a public hearing in Canberra. A Sectional Committee subsequently inspected the site for the proposed extension and the facilities of the existing City South Exchange.

THE REFERENCE

2. The proposal referred to the Committee is for the erection of a self-contained building comprising a sub-basement, basement, ground floor and eight upper floors on a site adjoining the southern boundary of the existing City South telephone exchange building in Castlereagh Street, Sydney. The work is estimated to cost \$1,850,000.

2.

3. The building is to accommodate crossbar subscribers exchange equipment which will permit access to the automatic trunk switching network and meet the demands of multi-exchange line and high-calling rate business subscribers in the City South exchange area. Up to 21,000 subscribers will be provided for. The new equipment will replace obsolescent local subscribers switching apparatus in the present exchange and cater for growth in the City South Exchange area up to the year 2000.

4. This project is planned as the first stage of a three-stage redevelopment of the City South communication centre. Stages 2 and 3 are timed for approximately 1980 and the turn of the century respectively.

EXISTING FACILITIES

5. The City South Exchange area is generally bounded by Druitt and Market Streets and St. James Road to the north, College Street to the east, Goulburn Street to the south and the Darling Harbour Goods Yard and Pyrmont Street to the west.

6. The City South Exchange building is at 219-223 Castlereagh Street within the block bounded by Liverpool, Castlereagh, Bathurst and Pitt Streets. Adjoining its southern boundary also with a frontage to Castlereagh Street, is a Commonwealth owned parcel of land which is the site of the building in this reference. Abutting the rear of the existing building, and with a frontage to Pitt Street, is Sheffield House which the Commonwealth is in the process of acquiring. These three pieces of land are, respectively, the sites for the three stages of redevelopment mentioned in paragraph 4 above.

7. The existing building which was constructed in 1926 houses equipment providing 10,200 local subscribers lines, network switching and long line

transmission. Due to its obsolescence, this equipment is to be gradually phased out of service, thus eventually releasing the building for other post office uses requiring a lower structural loading.

FUTURE PLANS

8. After completion of the work in this reference, long term planning for the redevelopment of the City South telecommunications centre involves, as the second stage, the erection of a building on the Sheffield House site. It is planned that that building will house both automatic and manual assistance trunk switching facilities, long line equipment and other network services comprising data switching, centralised changed number and redirection equipment, a network management centre and a post office. We believe that its proximity to the existing City South Exchange and to underground cables linking the Sydney network, makes it ideal for such development. It has been estimated that, on present day costs, the building and services for stage 2 will cost about \$4.5 million and the telecommunication equipment \$30 million.

9. Stage 3 involves redevelopment of the site of the existing building. Besides permitting an extension of activities from stage 2, it will also cater for local subscribers development from the turn of the century. The demand experienced will determine the timing of this final stage. It has been calculated that the building and services will cost about \$4 million and the equipment \$27.3 million.

10. These figures represent a capital cost of approximately \$76 million for the ultimate development of the complex.

THE NEED

11. Equipment space in the existing exchange building is now saturated and the building is structurally unsuitable for vertical extension. In addition, the present installations have reached the structural loading limit and more importantly, modern equipment which generally imposes greater floor loadings cannot be installed if the space is used economically.

12. Most of the local subscribers equipment serving the exchange is about 40 years' old. It has already exceeded its life expectancy and is difficult and uneconomic to maintain. The equipment is unsuitable for the provision of modern services including automatic trunk dialling (S.T.D.). Trunk calls from the exchange area must therefore be handled manually, thereby adding to the prevailing congestion in the Sydney manual trunk exchanges.

13. The Committee were told that although there is virtually no waiting time for new connections in the exchange area, subscribers do not have access to S.T.D. facilities except for heavy users who are connected to other exchanges. As the exchange area takes in a good part of Sydney's central business district, this situation is most unsatisfactory and more than likely results in the loss of revenue from trunk traffic.

14. At this point it might also be noted much the same situation prevails in the City North area. The disability there will not be alleviated until the Pitt Exchange, on which the Committee reported to Parliament in April 1967, is completed and operating.

15. Subscriber Growth Building redevelopment in the central business district of Sydney has been most spectacular in recent years and this trend seems certain to accelerate. Between 1957 and 1961, the average increase in

net city office space was 318,000 sq. ft per annum, whilst in 1962-68, the increase was 1,025,000 sq. ft per annum. The total office accommodation in the central business district was estimated at 18,050,000 sq. ft at the end of 1968. Buildings now under construction or scheduled for completion by December 1970 are expected to yield a further 3,030,000 sq. ft of office accommodation.

16. Five major exchanges serve the city area; City North, Dalley and York in the northern half and Haymarket and City South in the southern half. Pitt Exchange, due to be commissioned in 1971, will absorb City North and cater for growth in the Dalley and York areas. Haymarket Exchange has 7,350 local subscribers. Its capacity which was recently increased to 20,000 is expected to be sufficient to meet subscriber development for about the next 30 years.

17. The City South Exchange area is taking a considerable share of the growth of Sydney's central business district. As evidence of this, we noted that of 62 major buildings now under construction in the city area and due for completion by December 1970, 16 are in the City South area. We also received information that another 25 buildings, tentatively estimated to cost \$98 million, are being planned for the latter area. These include a good proportion of high-rise structures, with nine between 30 and 47 floors.

18. A further important indicator is the number of persons employed in this section of the city which is expected to increase from 42,000 at present to about 77,000 by the year 2000.

19. Planning for the City South Exchange area is based on the following development figures:

<u>Year</u>	1968 (actual)	1972	1975	1980	1985	1990	2000
<u>Subscribers</u>	8,500	9,900	10,800	12,300	14,000	16,000	21,000

20. As the present capacity of the exchange is 10,200 lines, the Committee were convinced that by no later than 1973 an extension of local subscribers services will be necessary to meet the future demands of the City South Exchange area.

21. The Committee are therefore agreed that there is a need for the work in this reference.

OCCUPATION OF THE PROPOSED BUILDING

22. It is proposed that space in the building will be occupied in the following way:

Sub-basement

Located on this floor will be the emergency power plant room accommodating, in addition to the main switchboard, three 330 kVA diesel alternator sets. Initially, two sets will be required to serve both the new and the existing exchange. Space will be reserved for a third set to meet future requirements. The rest of the space will be used for an exchange installation store, oil storage tanks, oil and ejector pumps and a cleaners' store.

Basement

The lower section of the cable chamber, an electricity substation, cable protection equipment, an external plant workshop and male toilets and showers are planned for this floor.

Ground Floor

This floor will contain the upper portion of the cable chamber, vehicle and staff entry, a vehicle turntable, an equipment uncrating area and cable hauling facilities.

First Floor

A double main distributing frame and ancillary areas, technical staff offices, toilets and lockers will be located here.

Second to Seventh Floors

These floors will accommodate the local subscribers switching equipment and supporting areas including power and battery rooms, the maintenance control centre and associated offices.

Eighth Floor

This area will be occupied by air conditioning and other building services plant.

23. Amenities The amenities to be provided in the building will comply with the relevant local ordinances and the recently amended Amenities Code.

24. The proposed building when fully equipped will require a staff of about 90, of whom up to 85 could be on duty concurrently. This staff will be able to use the cafeteria on the fifth floor of the existing building where there is capacity for the additional numbers.

THE BUILDING PROPOSAL

25. The Site The site which is currently used as a car park for post office vehicles, has a frontage of 54 ft 4½ in. and a depth of 117 ft 7 in.

26. The Committee noted that the site is located at the practical centre of cable reticulation of the City South Exchange area and is therefore well situated in respect of existing underground duct routes and the Pitt Street cable tunnel. The total site will provide sufficient space to meet the long term telecommunication needs of both local subscribers and trunk and miscellaneous activities envisaged in stages 2 and 3.

27. The Committee agree that the site selected is suitable.

28. Planning Considerations It is proposed to set back the face of the building at ground floor level 12 ft from the building alignment to facilitate hauling to the cable tunnel. This will also allow greater freedom of pedestrian movement in Castlereagh Street. Direct access to the existing exchange from the new building will be possible at all floors from the first to the fifth and provision has been made for cabling to future lateral extensions. Generally, lifts, stairs, toilets and amenities will be located along the northern wall of the building to permit clear areas for equipment.

29. A floor to floor height of approximately 15 ft 3 in. has been dictated by a clear height requirement below beams and mechanical ducts of 12 ft 6 in. for equipment, and the overall building height restrictions. Vehicular access to the ground floor from Castlereagh Street is proposed to facilitate movement of technical equipment within the building. Vehicles will turn within the building on a turntable at this level.

30. Structure The reinforced concrete structural frame of the building will be designed for its special functions and requirements including floor loadings of 200 lb. per sq. ft for equipment floors, floor slots for cable penetration, positioning of columns to suit regular spacing of equipment racks and to permit clearance for the cable chamber, driveway and vehicle turntable.

31. No provision has been made in the structural design for future vertical extensions. Subsequent stages of development of the site will be designed as separate structural units to suit requirements at that time.

32. Foundations will be of reinforced concrete founded on solid sandstone, while those of adjacent buildings exposed by site excavation will be supported as required.

33. Finishes As little will be seen of the external side and rear walls, architectural treatment in the form of pre-cast units of reconstructed stone will be used only on the front facade. Other external walls will be finished in face brick. The vertical feature of double recessed glazed units to each floor at the front of the building will contain the only windows in the building. A metal grill will screen building service plant on the eighth floor.

34. Internally, smooth surfaces which will not generate or harbour dust are proposed throughout the building. Equipment areas will have a plastic coating applied to wall and ceiling surfaces. Floors will be screeded level and finished with vinyl flooring in equipment and general areas. Toilet areas will have ceramic tiles on floors and walls. Amenity areas and corridors will have suspended ceilings.

35. Roofing Material The Committee were told that ribbed copper cladding is proposed for covering the concrete roof slab of the building, at a cost of approximately \$17,700. Enquiries revealed that alternatively, stainless steel or P.V.C. coated galvanised steel could be used, at costs of about \$13,440 and \$9,000 respectively.

36. We noted that in respect of the Pitt Exchange, stainless steel was proposed in the submission to the Committee but as there were difficulties

in obtaining the appropriate material locally and because of technical problems with roof flashings, P.V.C. coated galvanised steel is to be substituted.

37. As there is no aesthetic or economic reason to support the use of copper, the Committee recommend that P.V.C. coated galvanised steel roofing be used in this instance also.

38. Mechanical Services Generally, the building will be air conditioned using central air handling, refrigeration and boiler plant located on the eighth floor. Mechanical ventilation will be provided in the sub-basement, basement, cable chamber, vehicle access area, power and battery rooms, stairwells, locker rooms, toilets and the building services plant room.

39. Two emergency diesel generating sets will be provided in the sub-basement, one new and one transferred from the existing exchange. Cooling towers for this plant will be located on the eighth floor.

40. Miscellaneous equipment will include drinking water coolers, sump pumps, fire fighting pumps, domestic water booster pumps, hoists, a vehicle turntable and hot water supply.

41. Electrical Services The Sydney County Council will instal a transformer substation in the basement.

42. The switchboard associated with the emergency generating plant will be located in the sub-basement. Power for essential services will be reticulated through this board throughout the building and to the existing exchange.

43. Lighting will be from fluorescent fittings in accordance with the S.A.A. lighting code. General purpose power outlets will be positioned as required. A master and slave clock system will be installed.

44. Lifts Two fully automatic lifts will be provided. One will serve as a goods/passenger lift designed to carry telephone equipment racks, the other being for passenger traffic only.

45. Hydraulic Services Water, sewerage and drainage services will be connected to existing mains in Castlorough Street. A sewage ejector pump will be installed for basement areas. Water storage and pumping facilities will be provided within the building.

46. Fire Protection The building will be of fire resistant construction with two fire isolated stairways. Services and equipment will include a pre-action sprinkler system for equipment areas and wet sprinklers for other areas. Hydrants and hand fire extinguishers will be installed at appropriate points.

47. Committee's Conclusion Subject to the other recommendations in this report, the Committee recommend the construction of the work in this reference.

ESTIMATE OF COST

48. The estimated cost of the work when referred to the Committee was \$1,850,000 made up as follows:

	\$
Building works	950,000
Mechanical services	500,000
Electrical services	150,000
Lift installation	120,000
Hydraulics	130,000
	<u>1,850,000</u>

PROGRAMME

49. It is expected that after an approval to proceed is given, the preparation of final drawings and tender documents will take approximately 10 months. Construction time for the work is estimated at 18 months after a contract is let.

OTHER OBSERVATIONS

50. When reporting to the Parliament on the Pitt Exchange proposals in 1967, the Committee was critical that the project was even then running late and that as a result there could be a state of emergency in the provision of subscribers and S.T.D. services in the northern city area between 1970 and the operation of the first equipment in the new building.

51. The City South Exchange area which, like the Pitt Exchange area, is part of Sydney's central business district, is also without access to S.T.D. and cannot expect to enjoy this service for at least another three years. It is to be regretted that such a large part of Sydney's city area is so poorly serviced in this respect and is a situation which we regard as most unsatisfactory.

52. The City South Exchange is well placed at present to provide new local subscribers services and providing the design and construction targets for the new building are achieved, this situation could possibly continue. However, the Committee are apprehensive on two counts. Firstly, we feel that the target date for the completion of the new building, preparatory to the installation of the first equipment, is somewhat optimistic and in the light of experience at the Pitt Exchange, consider that the date for completion may be difficult to meet.

53. Reference has already been made in paragraph 17 to the spectacular rebuilding development, in construction and planned, in the City South Exchange area, which is now relatively depressed. At this stage, we would not speculate that insufficient telephone services will be available in the 1972-1974 period to meet the demands of these buildings, but it is clear that every endeavour should be made to accelerate the completion of the new telephone exchange building to prevent this occurring.

RECOMMENDATIONS AND CONCLUSIONS

54. The summary of recommendations and conclusions of the Committee is set out below. Alongside each is shown the paragraph in the report to which it refers.

Paragraph

- | | | |
|----|---|----|
| 1. | NO LATER THAN 1973 AN EXTENSION OF LOCAL SUBSCRIBERS SERVICES WILL BE NECESSARY TO MEET THE FUTURE DEMANDS OF THE CITY SOUTH EXCHANGE AREA. | 20 |
| 2. | THERE IS A NEED FOR THE WORK IN THIS REFERENCE. | 21 |
| 3. | THE SITE SELECTED IS SUITABLE. | 27 |
| 4. | P.V.C. COVERED GALVANISED STEEL ROOFING SHOULD BE USED IN LIEU OF COPPER. | 37 |
| 5. | SUBJECT TO THE OTHER RECOMMENDATIONS IN THIS REPORT, THE COMMITTEE RECOMMEND THE CONSTRUCTION OF THE WORK IN THIS REFERENCE. | 47 |
| 6. | THE ESTIMATED COST OF THE WORK WHEN REFERRED TO THE COMMITTEE WAS \$1,850,000. | 48 |

FOR SENATOR BRANSON

I present the report of the Parliamentary Standing Committee on Public Works relating to the following proposed work,

CITY SOUTH TELEPHONE EXCHANGE, SYDNEY, NEW SOUTH WALES.

I ask for leave to make a short statement.

(WHEN LEAVE GRANTED)

The summary of recommendations and conclusions of the Committee is as follows:

1. No later than 1973 an extension of local subscribers services will be necessary to meet the future demands of the City South Exchange area.
2. There is a need for the work in this reference.
3. The site selected is suitable.
4. P.V.C. covered galvanised steel roofing should be used in lieu of copper.
5. Subject to the other recommendations in this report, the Committee recommend the construction of the work in this reference.
6. The estimated cost of the work when referred to the Committee was \$1,850,000.
7. It is to be regretted that a large part of Sydney's city area is poorly serviced with S.T.D.
8. The date for the completion of the new building may be difficult to meet.
9. Every endeavour should be made to accelerate completion of the new telephone exchange building.

12 August, 1969.

FOR SENATOR BRANSON

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9. Every endeavour should be made to accelerate completion of the new telephone exchange building.

12 August, 1969.

Paragraph

- | | | |
|----|--|----|
| 7. | IT IS TO BE REGRETTED THAT A LARGE PART OF SYDNEY'S
CITY AREA IS POORLY SERVICED WITH S.T.D. | 51 |
| 8. | THE DATE FOR THE COMPLETION OF THE NEW BUILDING
MAY BE DIFFICULT TO MEET. | 52 |
| 9. | EVERY ENDEAVOUR SHOULD BE MADE TO ACCELERATE
COMPLETION OF THE NEW TELEPHONE EXCHANGE BUILDING. | 53 |

F.C. Chaney

(F.C. CHANEY)
Chairman.

Parliamentary Standing Committee on Public Works,
Parliament House,
CANBERRA, A.C.T.

10 July, 1969.