



1972

THE PARLIAMENT OF THE COMMONWEALTH OF AUSTRALIA

Parliamentary Standing Committee on Public Works

REPORT
relating to the proposed construction of a
TELEPHONE EXCHANGE
at
Sydney East, New South Wales
(TWENTY-EIGHTH REPORT OF 1972)

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PARLIAMENTARY STANDING COMMITTEE ON PUBLIC WORKS

TELEPHONE EXCHANGE,
SYDNEY EAST, NEW SOUTH WALES

R E P O R T

By resolution on 31 August 1972, the Senate referred to the Parliamentary Standing Committee on Public Works for investigation and report to the Parliament, the proposal to extend the East Telephone Exchange, Sydney, New South Wales.

The Committee have the honour to report as follows:

THE REFERENCE

1. The proposal referred to the Committee is for the erection of a self-contained building comprising a basement, ground floor and nine upper floors on a site adjacent to the existing East Telephone Exchange building in Liverpool Street in the suburb of Darlinghurst.
2. The estimated cost of the proposed work is \$3.5 million.
3. The building is to accommodate local subscribers switching equipment, long line equipment and facilities for the eastern suburbs tandem exchange area. The work in the reference is planned to cater for expected subscriber growth to the year 1997.

THE COMMITTEE'S INVESTIGATION

4. The Committee received written submissions and drawings from the Australian Post Office and the Department of Works and took evidence from their representatives at a public hearing in Canberra on 19 September 1972.
5. Before the hearing the Committee had inspected facilities in the existing exchange building and the site proposed for the new building.
6. The Committee's proceedings will be printed as Minutes of Evidence.

EAST TELEPHONE EXCHANGE

7. The East local subscribers exchange covers an area of three square miles immediately south-east of the Sydney central business district and includes the suburbs of Darlinghurst, Taylor Square, Moore Park, Paddington, Five Ways and Kings Cross. Associated with the local subscribers exchange is the East tandem exchange serving 13 square miles of the eastern suburbs from Vaucluse in the north to Bronte in the south.
8. The existing telephone exchange building is at the corner of Liverpool and Little Surrey Streets, Darlinghurst. It was built in two sections, the first in 1925 and the second, in the form of a lateral extension to the east, in 1952. The three level building covers a ground area of 11,500 square feet and contains equipment for 11,500 local subscribers lines.

NEED FOR NEW AND ADDITIONAL FACILITIES

9. Present Facilities The Committee were told that the exchange is already equipped to capacity. With the present rate of new subscriber demand of about 750 per annum the installed equipment will be fully utilised by mid 1973.

Of the present local subscribers lines, 8,000 are connected to obsolete equipment which is becoming uneconomical to maintain. We were told that spare parts are no longer readily available and it is necessary to cannibalise or use costly expedients to ensure continuity of an acceptable service. Further, this equipment cannot be adapted to modern requirements including subscriber trunk dialling (STD). The result has been an excessive demand on operator assistance and an increase in load on the Dalley manual trunk exchange in the city.

10. We noted that the cable entry and main distributing frame located in the 1925 portion of the exchange has been altered and adapted at considerable cost over the years but further extension is impracticable.

11. Subscriber Growth. The Committee noted that there is considerable redevelopment of commercial and residential properties in the East subscribers-exchange area, with commercial development being particularly significant. Over the next 25 years the number of subscribers is expected to increase by 175 per cent to 31,200. Growth is expected to be in excess of 7 per cent per annum initially tapering to around 3 per cent by 1997.

12. Total growth in the East tandem area is expected to be of the same order over the 25 year period to 1997. At present, tandem facilities for the area are provided by both East and Potts Point exchanges but to avoid traffic congestion and cope with forecast expansion it is proposed to centralise tandem facilities at East Telephone Exchange.

13. It was noted that new switching equipment cannot be available in the proposed building until the end of 1977. It will be necessary therefore, to make interim arrangements for new subscribers after 1973 when the existing equipment will be fully utilised.

This will be done by temporarily connecting new subscribers to the Potts Point exchange.

14. Committee's Conclusion It was evident to the Committee that the accommodation for equipment for the East subscribers exchange and the East tandem exchange will shortly be inadequate and there will be a continuing heavy demand for new services. It was also evident that much of the existing equipment is obsolete.

15. Clearly therefore, there is a need for the work in the reference.

THE SITE

16. The exchange site is appropriately located in terms of economic cable reticulation and proximity to adjoining tandem and city exchanges.

17. The area proposed for the new building adjoins the existing exchange and was acquired by the Commonwealth in 1952. It has a frontage of 79 feet to Liverpool Street and extends 122 feet in depth to Little Surrey Street. It is proposed that the main entry for vehicles will be from Liverpool Street. The site area available for building is 9,600 square feet and is vacant at present, being used only for line depot activities and associated vehicle parking. These activities are to be moved elsewhere. The site is readily accessible to public transport.

18. The Committee agree that the site is suitable for extension of telephone exchange facilities.

THE BUILDING PROPOSAL

19. Planning The building is to occupy the available space except for a setback of eleven feet from Liverpool Street. Initially the tall rectangular building will dominate its immediate surroundings and will be viewed on all sides.

Special attention is therefore to be given to its external appearance to afford visual relief to an essentially windowless facade, except for narrow full height glazed features at corners.

20. Vehicular and pedestrian access will be at the ground floor level. Lift cores and lobbies, toilets and the main air handling duct will be located on perimeter walls leaving large clear spaces for equipment.

21. The floor to floor height is to be 16 feet 8 inches being dictated by a clear height requirement of 12 feet 6 inches for equipment plus provision for floor structure and service ducts. Access to the existing building will be provided on first and second floor levels.

22. It was noted that the building as sited does not conform with the current floor space index requirements of the State Planning Authority in this area which is zoned residential, although when the plans were first examined by the City Council they were endorsed. The Committee noted that nevertheless the need for the building as proposed is accepted and that the Post Office has initiated action to have the site zoned for special purposes in common with similar facilities elsewhere. It was also observed that the Post Office proposes, as the opportunity occurs, to purchase adjoining property to improve the floor space index. This latter action will have the important side effect of improving the setting of the building and the amenity of its immediate environment.

23. It is proposed that space in the building be utilised in the following way:

24. Basement A substantial proportion of the basement will be occupied by the lower portion of the cable chamber.

The remaining space will accommodate cable protection equipment, an electricity sub-station, a parts store, a training/lecture room, lift wells and a staff lunch room and amenities including recreation space and lockers. Fuel storage tanks will be installed beneath the basement.

25. Ground Floor The upper section of the cable chamber, vehicle and staff entries, equipment unloading and handling areas, a supervisory office and parking space for nine official vehicles are to be located on this floor.

26. First Floor This floor will contain the main distributing frame (MDF), supervisory and clerical offices, test desks, air handling plant and local subscribers switching equipment.

27. Second Floor The MDF will extend to this floor and tandem and long line equipment will also be located there.

28. Third and Fourth Floors These floors will accommodate power rooms, air handling plants and local subscribers switching equipment.

29. Fifth Floor A central processor unit and associated power and inverter rooms will be located on this floor. There will also be air handling plant and a maintenance control centre.

30. Sixth Floor This floor will accommodate tandem exchange and long line equipment.

31. Seventh Floor A power room, air handling plant and additional local subscribers switching equipment will be located on this floor.

32. Eighth Floor The refrigeration plant to serve the air handling plants at each level will be located on this floor. A building services control room, boiler room, ventilation plant, workshop and store will also be provided.

33. Ninth Floor The ninth (roof) level will accommodate emergency generating plant, the main switchboard and cooling towers for air treatment plant.

34. Amenities The amenities to be provided in the building will comply with relevant local ordinances, the approved amenities code and Post Office standards.

35. When fully equipped the building will require a staff of up to fifty persons.

36. Structure The building will be constructed in reinforced concrete. It will be designed to meet special functions and requirements including floor loadings of 200 lbs per square foot for equipment floors, air conditioning loads, provision of slots in floors for cable penetration and column spacing to meet the requirements of equipment racks. No provision has been made for vertical extension, but lateral development could proceed with the demolition of the present building. Foundations will be of reinforced concrete on rock.

37. Mechanical Services Air conditioning will be provided to equipment and normally occupied areas. The system will comprise a central refrigeration plant located on the eighth floor delivering chilled water to individual air handling plants on each floor. Mechanical ventilation will be provided to the power rooms, staff locker room, car park, toilet areas and plant rooms.

38. Emergency generating sets will be located on the ninth floor to provide essential light and power in the event of mains failure. Cooling towers for generating sets and air conditioning plant will be located on the ninth floor. Other mechanical services will include hoisting facilities, a vehicle turntable, domestic hot water supply, refrigerated drinking water units and tea preparation and lunch room equipment.

39. Electrical Services Power will be supplied from the Sydney County Council mains through a substation to be installed by the Council in the basement. Critical electrical components will be duplicated where there is a need to maintain a high degree of reliability of service. Fluorescent lighting will be provided generally throughout the building and a master clock system will be installed.

40. Lifts Two passenger lifts and one goods lift are to be provided, each serving the basement, ground and floors one to eight.

41. Hydraulic Services Water, sewerage and drainage lines will be connected to Council mains services in Liverpool Street. Pumping facilities will be provided for sewerage, site drainage, fire protection and fuel supply.

42. Fire Protection The building will be of fire resistant construction with two fire isolated stairways. Fire services and equipment will include a sprinkler system, hydrants and hose reels throughout the building, hand extinguishers at appropriate points, an alarm system and manual call points.

43. Committee's Conclusion The Committee recommend construction of the work in the reference.

ESTIMATE OF COST

44. The estimated cost of the work when referred to the Committee was \$3.5 million made up as follows:

	\$
Building works	1,685,000
Mechanical services	1,320,000
Electrical services	340,000
Lift installations	120,000
Hydraulic services	35,000
	<u>\$3,500,000</u>

PROGRAMME

45. It is expected that after an approval to proceed is given the preparation of final drawings and tender documents will take 9 months. Construction time is estimated at 24 months after a contract is let.

RECOMMENDATIONS AND CONCLUSIONS

46. 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.

	<u>Paragraph</u>
1. ACCOMMODATION FOR EQUIPMENT FOR THE EAST SUBSCRIBERS EXCHANGE AND THE EAST TANDEM EXCHANGE WILL SHORTLY BE INADEQUATE.	14
2. THERE WILL BE A CONTINUING HEAVY DEMAND FOR NEW SERVICES.	14
3. THERE IS A NEED FOR THE WORK IN THE REFERENCE.	15
4. THE SITE IS SUITABLE.	18
5. THE COMMITTEE RECOMMEND CONSTRUCTION OF THE WORK IN THE REFERENCE.	43
6. THE ESTIMATED COST OF THE WORK WHEN REFERRED TO THE COMMITTEE WAS \$3.5 MILLION.	44


(G.R. KELLY)
Chairman.

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

28 September 1972.