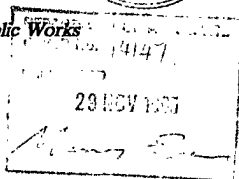


Parliamentary Standing Committee on Public Works



REPORT

relating to the proposed

CONSTRUCTION OF 10 APARTMENTS FOR CONSULATE-GENERAL STAFF, SHANGHAI

(Twenty-eighth Report of 1995)

The Parliament of the Commonwealth of Australia
Parliamentary Standing Committee on Public Works

Report relating

to the proposed

**Construction of 10 apartments for
Consulate-General staff, Shanghai**

(Twenty-eighth Report of 1995)

CONTENTS

	Page
Members of the 31st Parliamentary Standing Committee on Public Works	v
Extract from the Votes and Proceedings of the House of Representatives, No 152, 29 June 1995	vi
	Paragraph
THE REFERENCE	1
THE COMMITTEE'S INVESTIGATION	3
BACKGROUND	7
THE NEED	9
Committee's Conclusion	13
THE PROPOSAL	14
Options considered	14
Design Concepts	17
Master planning and future development	26
Structure	27
Codes and Standards	28
Acoustics	29
Environmental impact assessment	30
Heritage considerations	31
Energy conservation measures	32
Provisions for people with disabilities	34
Childcare provisions	35
Fire Protection and Security	36
Committee's Recommendation	40

THE SITE	41
Committee's Conclusion	44
CONSULTATIONS	45
CONSTRUCTION PROGRAM	47
PROJECT COST	50
Committee's Recommendation	52
CONCLUSIONS AND RECOMMENDATIONS	53

APPENDIXES

	Page
Appendix A - List of witnesses	A - 1
Appendix B - Project drawings	B-1 to B-11
Appendix C - Construction details	C-1 to C-3

**MEMBERS OF THE PARLIAMENTARY STANDING COMMITTEE
ON PUBLIC WORKS**

(Thirty-First Committee)

Mr Colin Hollis MP (Chair)
Senator Paul Henry Calvert (Vice-Chair)

Senate

House of Representatives

Senator Bryant Robert Burns	Mr John Neil Andrew MP
Senator Shayne Michael Murphy*	Mr Raymond Allen Braithwaite MP
	Mr Russell Neville Gorman MP
	Mr Robert George Halverson OBE MP
	Hon. Benjamin Charles Humphreys MP

*Replaced Senator John Devereux on 10 February 1995

**SECTIONAL COMMITTEE ON THE CONSTRUCTION OF 10 APARTMENTS FOR
CONSULATE GENERAL STAFF, SHANGHAI**

Mr Colin Hollis MP (Chair)
Mr Russ Gorman MP (Vice-Chair)
Senator Bryant Burns

Committee Secretary:	Peter Roberts
Inquiry Secretary:	Denise Denahy
Secretarial Support:	Suzanne Stanfield

EXTRACT FROM THE
VOTES AND PROCEEDINGS OF
THE HOUSE OF REPRESENTATIVES

No. 152 dated Thursday, 29 June 1995

15 **PUBLIC WORKS – PARLIAMENTARY STANDING COMMITTEE –
REFERENCE OF WORK – CONSTRUCTION OF 10 APARTMENTS
FOR CONSULATE-GENERAL STAFF, SHANGHAI**

Mr Walker (Minister for Administrative Services), pursuant to notice, moved – That, in accordance with the provisions of the *Public Works Committee Act 1969*, the following proposed work be referred to the Parliamentary Standing Committee on Public Works for consideration and report: Construction of 10 apartments for Consulate-General staff, Shanghai.

Question – put and passed.

PARLIAMENTARY STANDING COMMITTEE ON PUBLIC WORKS

CONSTRUCTION OF 10 APARTMENTS FOR CONSULATE-GENERAL STAFF, SHANGHAI

By resolution on 29 June 1995, the House of Representatives referred to the Parliamentary Standing Committee on Public Works for consideration and report to Parliament the construction of 10 apartments for Consulate-General staff, Shanghai.

THE REFERENCE

1. The proposal referred to the Committee comprises construction of a five-storey building of 10 apartments, plus underground car park and associated recreational facilities including a swimming pool and a tennis court.
2. The estimate cost of the proposal when referred to the Committee was \$10.529 million at May 1995 prices.

THE COMMITTEE'S INVESTIGATION

3. On 31 August 1995 the Committee appointed a Sectional Committee comprising Mr C Hollis MP (Chair), Mr R Gorman MP (Vice-Chair) and Senator B Burns to undertake this inquiry. The Committee received written submissions from the Overseas Property Group (OPG), the Department of Foreign Affairs and Trade (DFAT) and the Community and Public Sector Union (CPSU) and the Sectional Committee took evidence from representatives of these organisations at a public hearing held at Parliament House, Canberra on 27 October 1995. Prior to the public hearing the Sectional Committee was shown a video and slides relating to the project.
4. The Committee again draws attention to its inability to travel overseas to inspect existing premises, proposed sites and to have discussions with planners, designers and staff. The Committee regards this as a completely unsatisfactory situation.
5. Written submissions regarding the proposal were also received from the following organisations and are incorporated in the Committee's proceedings:

- Austrade

- Energy Conservation Systems Pty Ltd
- Department of Immigration and Ethnic Affairs
- Environment Protection Agency
- Childcare at Work
- Department of Primary Industries and Energy
- Commonwealth Fire Board
- Toora Consulting.

6. A list of the witnesses who gave evidence at the public hearing is at Appendix A. The Committee's proceedings will be printed as Minutes of Evidence.

BACKGROUND

7. Under the Administrative Arrangements Order of 24 July 1987, the Department of Administrative Services is responsible for the acquisition, leasing, management and disposal of land and property overseas. This activity is undertaken by the Department's Overseas Property Group which, in managing the overseas estate, is the funding and construction authority of new works.

8. In administering this function, the Department is advised by the Overseas Property Committee, which comprises senior representatives of user, service and regulatory departments.

THE NEED

9. The rapid growth of the Chinese economy in recent years has meant that the Shanghai property market has grown at a feverish pace. The financial pressures on the Shanghai economy are unlikely to abate within the next three to five years. Rents are expected to continue to increase at an estimated rate of 10% p.a. Residential accommodation of a suitable standard and size will continue to be scarce and command premium prices in sought after areas.

10. The majority of Australian staff are housed in modern high rise accommodation in the Shanghai Centre, as is the case with most of the expatriate community. The Shanghai Centre is a joint venture hotel/apartment/office complex and includes retail outlets, several restaurants, a theatre, a health club and other recreational facilities. Rents are currently in the order of \$A19,000 per month and have a fixed escalation clause of 10% p.a for the two year leases.

There are currently 10 Australia-based staff in Shanghai with staff numbers likely to increase in the longer term.

11. Leased residential accommodation in Shanghai suitable for expatriates is at a premium with lengthy waiting lists, no room to negotiate rents and steep escalation clauses (10%) included in all leases. Landlords have taken advantage of the favourable position they find themselves in by increasing rents significantly on each lease renewal. The renewals in 1994 saw rents more than double on two year leases.

12. On this basis of short supply and rapidly rising costs, OPG undertook a strategy visit to Shanghai in September 1993 to examine its property strategy including options of ownership. Early evaluations indicated a simple pay back period for a development option in the designated consular district was less than six years. The Canadian Government has indicated an interest in either renting or meeting the capital cost of two of the apartments. OPG advised that negotiations on this matter are continuing.

Committee's Conclusion

13. There is a need for the construction of 10 apartments for Consulate-General staff in Shanghai to provide accommodation which is more economic than current leasing arrangements.

THE PROPOSAL

Options considered

14. The economic upturn in China, and in particular the economic development zone, which includes Shanghai as its centre of business, has led to an influx of foreign investors and speculators into the Shanghai market. This, together with the increasing number of joint ventures, has resulted in desirable/acceptable properties being snapped up at an alarming rate.

15. The opportunity to purchase land in the designated consular district, on which to construct residential accommodation was formally put in a New Policy Proposal in the 1994/95 Budget deliberations. The overwhelming favourable economic advantage of ownership over leasing saw this proposal funded and the Commonwealth secured the site in September 1994.

16. The reasons for adopting the development option were primarily economic. However, the construction of purpose-built residential

accommodation gives OPG an opportunity to provide some suitable accommodation in terms of layout, standard of construction and the provision of recreational facilities not generally accessible within the community.

Design Concepts

17. The 10 apartments will be constructed as a single building of five storeys incorporating two apartments per floor. An indoor swimming pool and a combined recreational room will be provided in a separate recreation facility. Basement car parking and storage areas will be provided under an all weather tennis court which is elevated one metre above natural ground level.

18. The proposal has received support from the Consulate because of the nature and cost of existing leased accommodation. There is also a lack of suitable amenities for families with smaller children.

19. Apartments have been designed in accordance with the design brief, taking account of local building regulations, climatic conditions, the surrounding built environment and the need for privacy, amenity and security for the occupants. Account has also been taken of the recommendations and requirements of the Consulate-General, which has been consulted in the development of the proposal. The apartments will be constructed as a single building of five storeys with each floor serve by a lift and fire escape stairway.

20. One of the main objectives of the design has been to maximise privacy. Two apartments are accessed off the lift/stair lobby. Domestic staff have been provided with a separate entrance to maintain their own privacy as well as that of the family. A fire escape stair accessed from the lift lobby provides emergency egress.

21. The lift and stairs descend to ground level. Underground car parking for 20 cars and storage areas are provided under the all-weather tennis court which is elevated one metre above natural ground level. Visitor parking and service vehicle traffic are restricted to an area adjacent to the guard house at the main entry to reduce site traffic.

22. Apartment design is based on the concept of a clear separation between formal representational areas and private family areas. This allows both areas to function simultaneously without conflict and compromise. The ability to provide discreet and convenient access and egress for domestic staff helps to improve living conditions.

23. The apartments have balconies for outside living and entertainment. They also provide sun shading to living areas, kitchens and family rooms. Sun shading will also be provided to minimise heat gains to windows on the south elevations. OPG advised at the public hearing that the option of providing a sliding screen arrangement to enable the balconies to be enclosed would be considered during detailed design development.

24. An amenities facility has been planned as a discrete building and includes a recreation room, kitchen and adjacent servery, store and indoor swimming pool. A common toilet and changeroom will be shared between the recreation room, pool and tennis court. A covered outdoor BBQ area will be provided between the recreation room and tennis court. A children's play area will be provided with the recreation facilities.

25. The site will be landscaped with trees and shrubs and will have suitable surface treatments for access and recreation.

Master planning and future development

26. Master planning allows for the provision of a duplicate apartment building to the eastern end of the site. The apartment building has been planned within the allowable setbacks for the site. The recreation facilities are located to allow for future site development. At the public hearing the Sectional Committee was advised that the allowable development height has been increased from 20 metres to 24 metres. OPG is therefore looking at options to better utilise the site. One possibility is to relocate the recreational facilities, excluding the pool, underneath the apartment building and to move the pool back to the western boundary of the site. This would have the advantage of providing an increase in useable area in front of the building and provide a more open feel to the complex. It is not anticipated that there will be cost implications from this change.

Structure

27. The planned structure has been designed for seismic resistance and consists of a system of floors supported by load bearing shear walls and columns. The foundations are to be bored piles. The structure is reinforced concrete. (Construction details are at Appendix C.)

Codes and Standards

28. Design and construction of the works will conform with the local requirements and standards. Australian or other internationally recognised Codes

of Practice will be used if local codes are unavailable or are not considered acceptable.

Acoustics

29. The apartments have been planned to allow for maximum acoustic privacy between apartments. Particular consideration has been given to the materials throughout to minimise reverberation. Hard floor surfaces will have acoustic underlay. Reduction of sound transmission between areas such as bathrooms and living areas will be included in the design solution. Building services will be designed to minimise noise transmission.

Environmental impact assessment

30. An environment impact statement is not required by local authorities.

Heritage considerations

31. There are no heritage considerations associated with the new residential accommodation proposal.

Energy conservation measures

32. Passive energy conservation provisions incorporated in the building design include:

- building and living space orientation to optimise winter solar gain and summer solar exclusion
- minimal window penetrations to east and west elevations
- sun shading provided by overhanging balconies and by use of sun screens over south facing windows
- the use of tinted glass for all windows
- active energy conservation provisions include -
 - individual control of air conditioning units within each apartment on a room by room basis to allow switching off of those areas not in use
 - time clock control of common area air conditioning systems
 - energy efficient lighting will be installed.

33. OPG advised at the public hearing that because of pollution levels in Shanghai, the use of solar heating for hot water is not considered practical.

Provisions for people with disabilities

34. Access for people with disabilities is provided to all apartment levels and the amenities areas.

Childcare provisions

35. Childcare provisions have not been provided, although the residents could use the recreation room for this purpose.

Fire Protection and Security

36. The apartments will be constructed and equipped to meet local requirements and to conform to Australian Fire Safety Standards. Each apartment will be separately air conditioned and fire isolated and will form its own smoke compartment.

37. A central fire alarm system will be installed. The installation will comprise a smoke detector in corridors outside bedrooms and other strategic locations within the apartments. Detectors will be installed in common areas and adjacent to stair lobbies. The main Fire Indicator Panel will be installed in the ground floor lobby area. Individual audible alarms will be provided to each apartment. Emergency lighting to AS2293 and local requirements, with dual language (English/Chinese) exit signs, will be provided to facilitate emergency egress from the building.

38. Fire hydrants and hose reels will be provided on each floor and around the site. A hydrant water storage system with hydrant booster pump sets will be provided. The swimming pool water will be available for fire fighting purposes, if required. However, no specific systems will be provided for accessing this water. Reliance will be placed on the use of the fire brigades portable pumping equipment if required.

39. The site will be surrounded by a perimeter wall with a main vehicular and pedestrian entry from Wan Shan Road. Access through the main gate will be controlled from the guard post. Each apartment will be provided with a video intercom to the main gate to screen visitors to the apartments. A second pedestrian access gate will be provided to Gu Bei Road to permit emergency escape.

Committee's Recommendation

40. The Committee recommends that the Overseas Property Group continue consultations with the Department of Foreign Affairs and Trade, staff of the Consulate-General and the Community and Public Sector Union regarding possible changes to the design of the project. The Committee further recommends that the Overseas Property Group, before construction commences, advises the Committee of the result of these consultations.

THE SITE

41. The site of the proposed staff apartment development is in the Hongqiao Economic and Technological Development Zone of Shanghai. This commercial development zone was established in 1983 and includes a residential subdivision for Consulate housing.

42. The site is located approximately four kilometres from the existing Chancery located in Fuxing Road and approximately one kilometre from the International School. The site has a 51m frontage onto Wan Shan Road to the east and 50m frontage onto Gu Bei Road to the west. The north and south site boundaries adjoin undeveloped land zoned for medium rise consulate residential sites. The land is essentially flat with level access from the frontage to Wan Shan Road.

43. The Consulate-General has executed a Contract for Land Use with the Shanghai Minhang and Hongqiao Development Corporation. The term of use is for 70 years. The site is located within a city planning zone which permits multi-storey residential development. Building height and plot ratios and building setback requirements of the local planning authorities have been addressed in the proposal and all known conditions have been met.

Committee's Conclusion

44. The site selected is suitable for the construction of the 10 apartments proposed in this reference.

CONSULTATIONS

45. Local authorities and utility services have been contacted regarding the proposed development. The planning and preliminary design of the project has been based on advice and planning requirements provided by those authorities.

46. In addition the following Australian organisations were consulted:

- Department of Foreign Affairs and Trade
- AusAid
- Department of Immigration and Ethnic Affairs
- Department of Defence
- AUSTRADE
- Australian Federal Police
- Foreign Affairs and Trade Association
- Combined Public Sector Union
- Family Liaison Officer-Department of Foreign Affairs and Trade
- Department of Industry, Science and Technology
- Department of Employment, Education and Training
- Foreign Services Family Association.

CONSTRUCTION PROGRAM

47. It is proposed to call selected tenders based on full working drawing documentation. A single contract will be let for the construction of the building and the fitting out works.

48. Subject to Parliamentary approval, tenders for the construction of the facility could be invited in March 1996 with a 15-18 month construction period.

49. OPG also assured the Committee that where possible, a clause will be added to all contracts which will require evidence that all sub-contractual financial obligations have been met, prior to subsequent payments being made by the Commonwealth to the contractor.

PROJECT COST

50. The outturn preliminary estimate for this proposal is \$10.529 million. This includes construction and other related costs such as consultants fees, project administration, supervision and site office expenses. The estimate does not include furniture, nor white goods. At the public hearing the Sectional Committee was advised that following a recommendation from its social planning consultant, OPG has increased the size of the bedrooms in each apartment at an

additional cost of \$130 000. The estimated outturn cost is therefore \$10.659 million.

51. At the public hearing OPG advised that the cost of construction in Shanghai is one of the most expensive in the world. The cost estimate has been prepared by experienced cost estimators based in the region. The estimate reflects the quality and standard of accommodation, the use of Australian materials and the need for a significant degree of expatriate supervision in order to achieve the standard of finish required.

Committee's Recommendation

52. The Committee recommends the construction of 10 apartments for Consulate-General staff, Shanghai at an estimated outturn cost of \$10.659 million at May 1995 prices.

CONCLUSIONS AND RECOMMENDATIONS

53. The conclusions and recommendations of the Committee and the paragraphs in the report to which they refer are set out below:

- | | Paragraph |
|--|-----------|
| 1. There is a need for the construction of 10 apartments for Consulate-General staff in Shanghai to provide accommodation which is more economic than current leasing arrangements. | 13 |
| 2. The Committee recommends that the Overseas Property Group continue consultations with the Department of Foreign Affairs and Trade, staff of the Consulate-General and the Community and Public Sector Union regarding possible changes to the design of the project. The Committee further recommends that the Overseas Property Group, before construction commences, advise the Committee of the result of these consultations. | 40 |
| 3. The site selected is suitable for the construction of the 10 apartments proposed in this reference. | 44 |
| 4. The Committee recommends the construction of 10 apartments for Consulate-General staff, Shanghai at an estimated outturn cost of \$10.659 million at May 1995 prices. | 52 |


Colin Hollis MP
Chair

23 November 1995

APPENDIX A

WITNESSES

FUNSTON, Dr John, Director, Philippines, Malaysia, Singapore, Brunei Section, Department of Foreign Affairs and Trade, Canberra, Australian Capital Territory 2600

HANCOCK, Mr Brian Richard, Acting Assistant General Manager, Overseas Property Group, Department of Administrative Services, 3rd Floor West, 111 Alinga Street, Canberra City, Australian Capital Territory 2601

LEADER, Dr Malcolm Ashley, Assistant Secretary, Resources Branch, Department of Foreign Affairs and Trade, Canberra, Australian Capital Territory 2600

LEONG, Mr Harry Chan-Hing, Chief Design Architect, Australian Construction Services, Department of Administrative Services, Level 5, St James Building, 121 William Street, Melbourne, Victoria 3000

McGRATH, Mr David Keith, Acting Director, China and Mongolia Section, Department of Foreign Affairs and Trade, Canberra, Australian Capital Territory 2600

MEFFERT, Mr Wolfgang Klaus, Chief Engineer, Overseas Property Group, Department of Administrative Services, 3rd Floor West, 111 Alinga Street, Canberra City, Australian Capital Territory 2601

PALYWODA, Mr Stephen Joseph, General Manager, Overseas Property Group, Department of Administrative Services, 3rd Floor West, 111 Alinga Street, Canberra City, Australian Capital Territory 2601

SELLECK, Mr Gordon William, Executive Officer, Overseas Resources Section, Department of Foreign Affairs and Trade, Canberra, Australian Capital Territory 2600

SOLIN, Mr Ian, Secretary, Overseas Conditions Committee, Community and Public Sector Union, c/- Department of Foreign Affairs and Trade, Administrative, Building, Parkes, Australian Capital Territory 2600

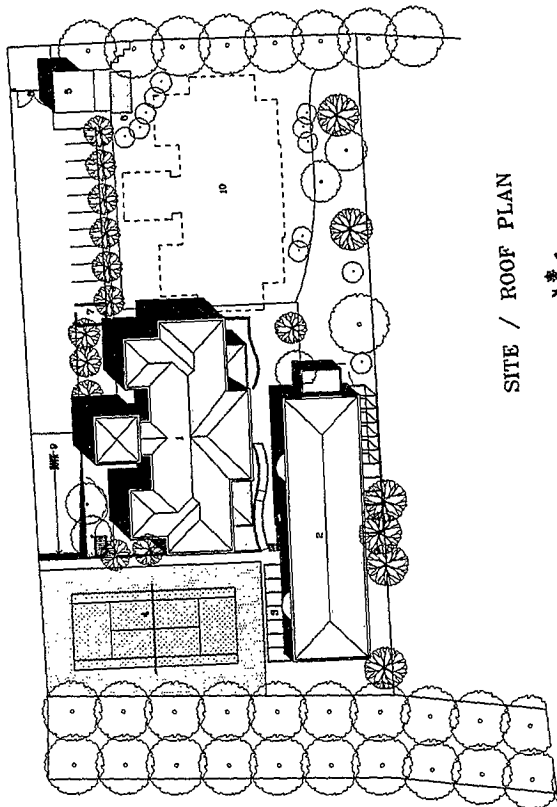
APPENDIX B

PROJECT DRAWINGS

Location Plan	B - 1
Site / Roof Plan	B - 2
Ground Floor Plan	B - 3
AS2 Plan - Ground and First Floors	B - 4
AS2 Plan - Second Floor	B - 5
AS3 Plan Third and Fourth Floors	B - 6
North Elevation and West Elevation	B - 7
South Elevation and Section	B - 8
Recreation Facility	B - 9
Gate House and Gardeners Store	B - 10
Perspective View	B - 11

LEGEND

- 1 APARTMENT BUILDING
- 2 TERRACE BUILDING
- 3 TERRACE
- 4 TENNIS COURT
- 5 GARDENES STONE
- 6 EXERCISE TERRACE
- 7 EXERCISE COURSE
- 8 ENTRANCE GATES
- 9 GARDENES STONE
- 10 FUTURE APARTMENTS



SITE / ROOF PLAN



AUSTRALIAN GOVERNMENT STAFF HOUSING
SHANGHAI, P.R.C.

FOR OVERSEAS PROPERTY GROUP BY AUSTRALIAN CONSTRUCTION SERVICES

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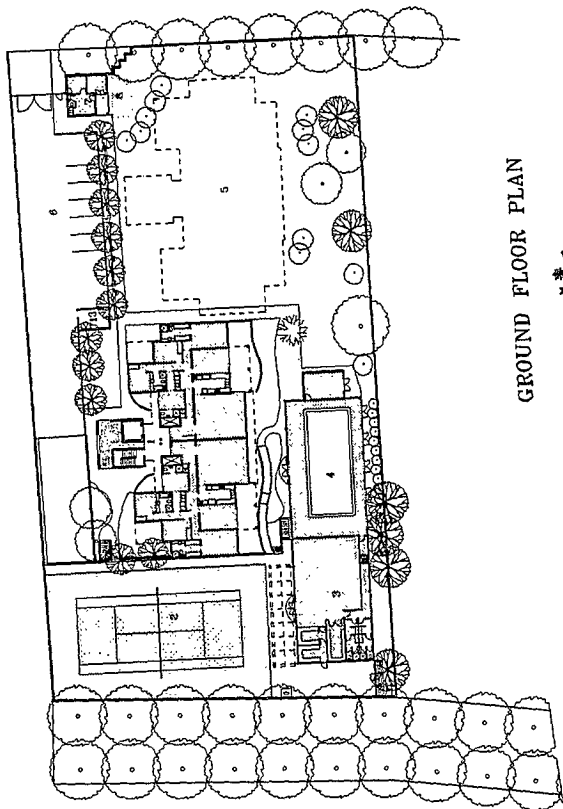
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DRG 65/STC009/AS01

LEGEND

- 1 APARTMENTS
- 2 SWIMMING POOL
- 3 RECREATION ROOM
- 4 VISITOR'S CAR PARK
- 5 GATE HOUSE
- 6 GENERATOR
- 7 CAR PARK
- 8 CAR PARK
- 9 CAR PARK
- 10 CAR PARK
- 11 CAR PARK
- 12 CAR PARK
- 13 REFUSE ENCLOSURE



GROUND FLOOR PLAN



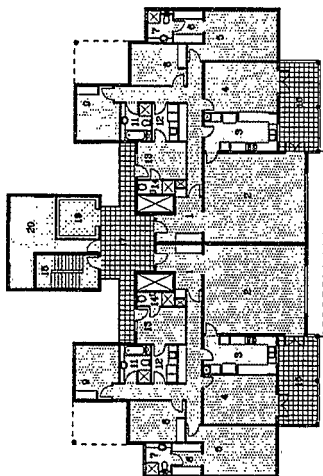
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SHANGHAI, P.R.C.

FOR OVERSEAS PROPERTY GROUP BY AUSTRALIAN CONSTRUCTION SERVICES

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DRG 90/SP209/ASTE03



LEGEND

- 1 ENTRY
- 2 LIVING/DINING
- 3 KITCHEN
- 4 MASTER BEDROOM
- 5 WALK-IN ROBE
- 6 BATHROOM
- 7 BEDROOM 2
- 8 BEDROOM 3
- 9 BEDROOM 4
- 10 BEDROOM 5
- 11 BEDROOM 6
- 12 BEDROOM 7
- 13 DOMESTIC QUARTERS
- 14 DOMESTIC ENSUITE
- 15 CLOSET
- 16 PRIVATE BALCONY
- 17 ACCESS BALCONY
- 18 TERRACE
- 19 LIFT
- 20 PLANT ROOM

AS2 PLAN - GROUND AND FIRST FLOORS



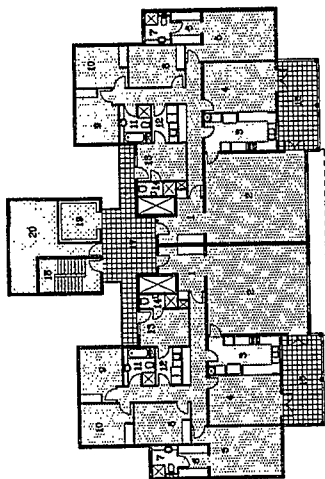
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SHANGHAI, P.R.C.

FOR OVERSEAS PROPERTY GROUP BY AUSTRALIAN CONSTRUCTION SERVICES

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LEGEND

- 1 ENTRY
- 2 KITCHEN/DINING
- 3 KITCHEN
- 4 BEDROOM
- 5 BATHROOM
- 6 WALK-IN ROBE
- 7 BEDROOM BATHROOM
- 8 BEDROOM
- 9 BEDROOM
- 10 BATHROOM
- 11 LAUNDRY
- 12 QUARTERS
- 13 DOMESTIC ENSUITE
- 14 GUEST TOILET
- 15 GUEST TOILET
- 16 GUEST TOILET
- 17 ACCESS BALCONY
- 18 STAIRS
- 19 PLANT ROOM
- 20 PLANT ROOM

AS2 PLAN - SECOND FLOOR



AUSTRALIAN GOVERNMENT STAFF HOUSING SHANGHAI, P.R.C.

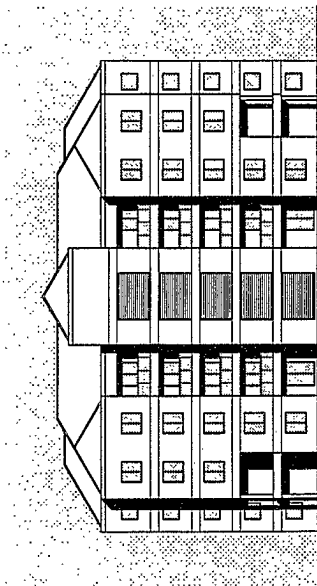
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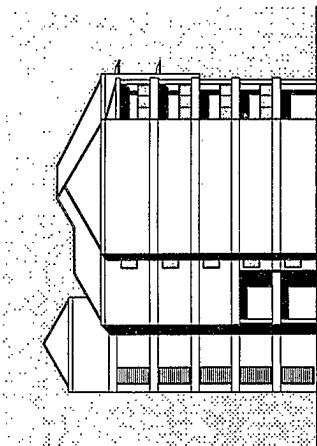
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NORTH ELEVATION



WEST ELEVATION



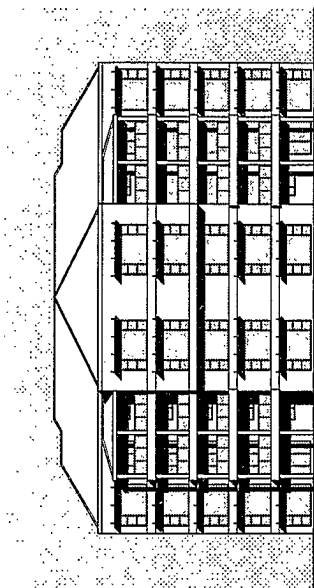
AUSTRALIAN GOVERNMENT STAFF HOUSING
SHANGHAI, P.R.C.

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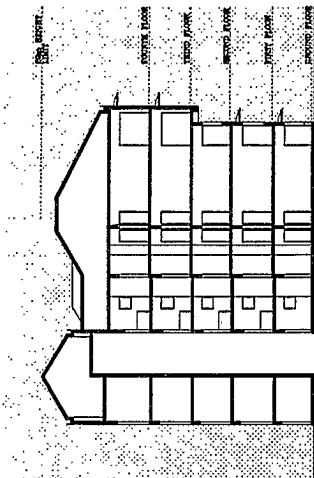
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SOUTH ELEVATION



SECTION



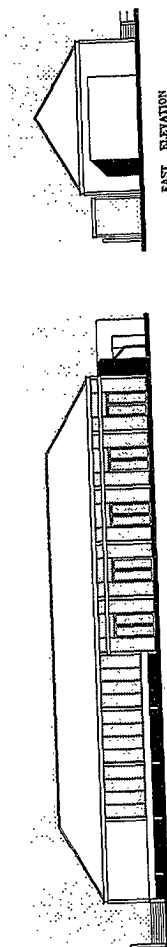
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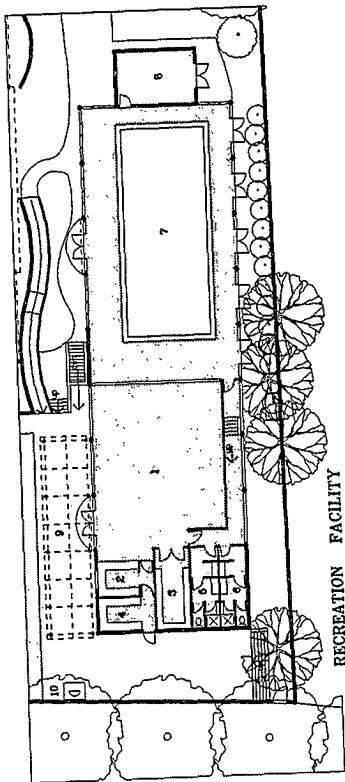
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EAST ELEVATION

SOUTH ELEVATION

- LEGEND
- 1 RECREATION ROOM
 - 2 SERVICE ROOM
 - 3 STORE ROOM
 - 4 MALE W.C./CHANGE
 - 5 FEMALE W.C./CHANGE
 - 6 PLANT ROOM
 - 7 RECEPTION
 - 8 DIN



RECREATION FACILITY



AUSTRALIAN GOVERNMENT STAFF HOUSING SHANGHAI, P.R.C.

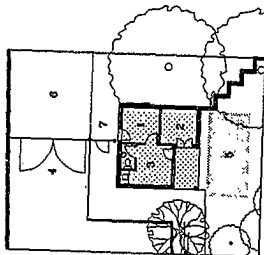
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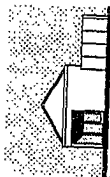
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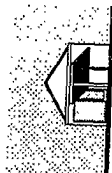
GROUND FLOOR PLAN

LEGEND

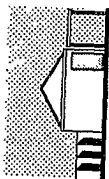
GROUND
GUARD ROOM
ENTRANCE
COVERED ENTRY
TOILET
KITCHEN
DINING ROOM
FURNITURE
ACCESS



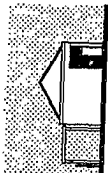
SOUTH ELEVATION



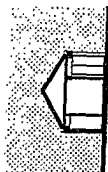
NORTH ELEVATION



EAST ELEVATION



WEST ELEVATION



SECTION AA

GATE HOUSE AND GARDENERS STORE



AUSTRALIAN GOVERNMENT STAFF HOUSING
SHANGHAI, P.R.C.

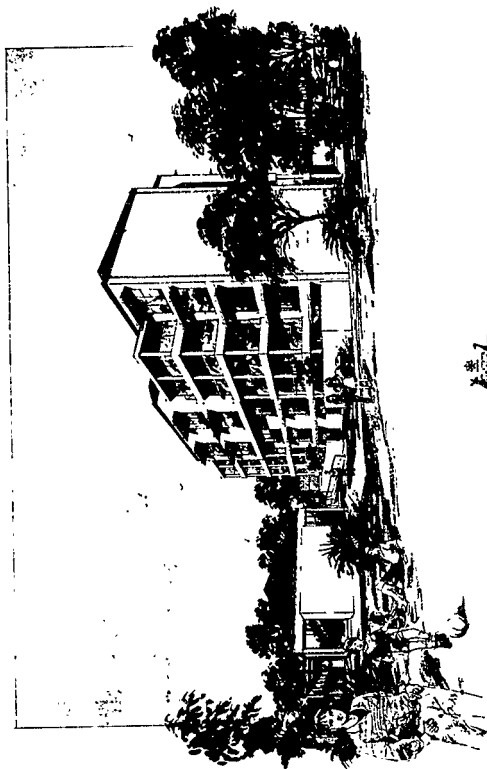
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DATE 15-5-55



ONE 92/79



AUSTRALIAN GOVERNMENT STAFF HOUSING
SHANGHAI, P.R.C.
FOR OVERSEAS PROPERTY GROUP BY AUSTRALIAN CONSTRUCTION SERVICES

CONSTRUCTION DETAILS

Materials and Finishes

1. Generally the design of the building will be based on Australian standards using local and Australian materials where appropriate, to ensure the required level of quality. Non-load bearing internal walls will be rendered and painted masonry blockwork. Load bearing external walls will be reinforced concrete tiled externally with ceramic tiles. Non-load bearing external walls will be reinforced concrete tiled externally with ceramic tiles and aluminium framed windows.

2. Lift lobbies and balconies will be finished with ceramic tiles. Ceiling finishes will be painted rendered concrete soffits with plasterboard bulkheads concealing in ceiling services such as plumbing. Floor finishes will be carpet in all living areas and bedrooms and ceramic tiles to wet areas and kitchens. Ceramic floor and wall tiles will be used in kitchens and wet areas.

Mechanical services

3. The living and sleeping areas of the apartments and the recreation room will be air conditioned.

4. Each apartment will be air conditioned using air cooled direct expansion units, with a separate wall mounted fan coil unit in each room. This allows individual room on/off and temperature control.

5. Exhaust systems will be provided for each apartment for all kitchens, bathrooms, toilets and laundries. Exhaust will be generally direct to outside with ducted systems where this is not possible.

6. Ceiling mounted propeller fans will be provided in all apartments to allow tenants the option of using the fans in lieu of air conditioning, thus saving energy. The swimming pool enclosure will be heated to control condensation and evaporation. The basement carpark, box stores and plant areas will be mechanically ventilated

7. Hot water will be provided by individual electrical powered hot water storage units located in each apartment and the amenities areas. A stand-by generator will provide a back-up power supply for the total electrical power

requirements of the development. Mains gas will be reticulated to each kitchen for cooking purposes.

Hydraulic services

8. Fire hydrants and hose reels will be provided throughout the development. Town water will be filtered and treated to World Health Organisation standards at all kitchen outlets. For fire fighting purposes, water from the supply mains will be held in storage tanks and reticulated around the site. Sewage will be discharged to town mains in Wanshan Road.

Electrical services

9. It is proposed that the high voltage electrical supply be provided by the local supply authority to a new sub-station located on the site. A pad-mounted package emergency generator set will provide power in the event of mains failure. Rising sub-mains will be provided with take-offs to each apartment distribution board.

10. A telephone system will be provided throughout the building. A lightning protection system will be provided. A television satellite dish will be provided with outlets in each apartment. Security and general lighting will be provided around the site.

Lifts

11. One hydraulic passenger lift, sized to suit the building population and able to carry a stretcher, will be provided.

Other civil works

12. The access road to the underground carpark, and the visitor and service vehicle car parking will be constructed using concrete paving. A solid screen enclosure for waste bins will be provided. The points of entry to the site will be planned to exclude localised street flooding from entering the site.

Security

13. The site will be surrounded by a perimeter wall with a main vehicular and pedestrian entry from Wan Shan Road. Access through the main gate will be controlled from the guard post. Each apartment will be provided with a video intercom to the main gate to screen visitors to the apartments.. A second

pedestrian access gate will be provided to Gu Bei Road to permit emergency escape.

Occupational Health and Safety

14. OPG has been advised that the Occupational Health and Safety Act (Commonwealth Employment) 1991 applies to the workplace only. However, the principles of safe and efficient housing design have been applied to this project.

Landscaping

15. The site will be landscaped to achieve the following objectives:

- provide an attractive and tranquil setting for the building complex
- provide a buffer between the apartments and the adjacent street and adjoining residential blocks
- provide a pleasant micro-environment for residents and visitors
- provide outside recreational areas for residents. This will include that part of the site identified for future development which will be grassed in the interim
- landscape species will be selected for their suitability to local climate, to maximise shade and to provide visual privacy.