

Report of

UWANKARA PALYANYKU KANYINTJAKU



An Environmental and Public Health Review within the Anangu Pitjantjatjara Lands

December 1987



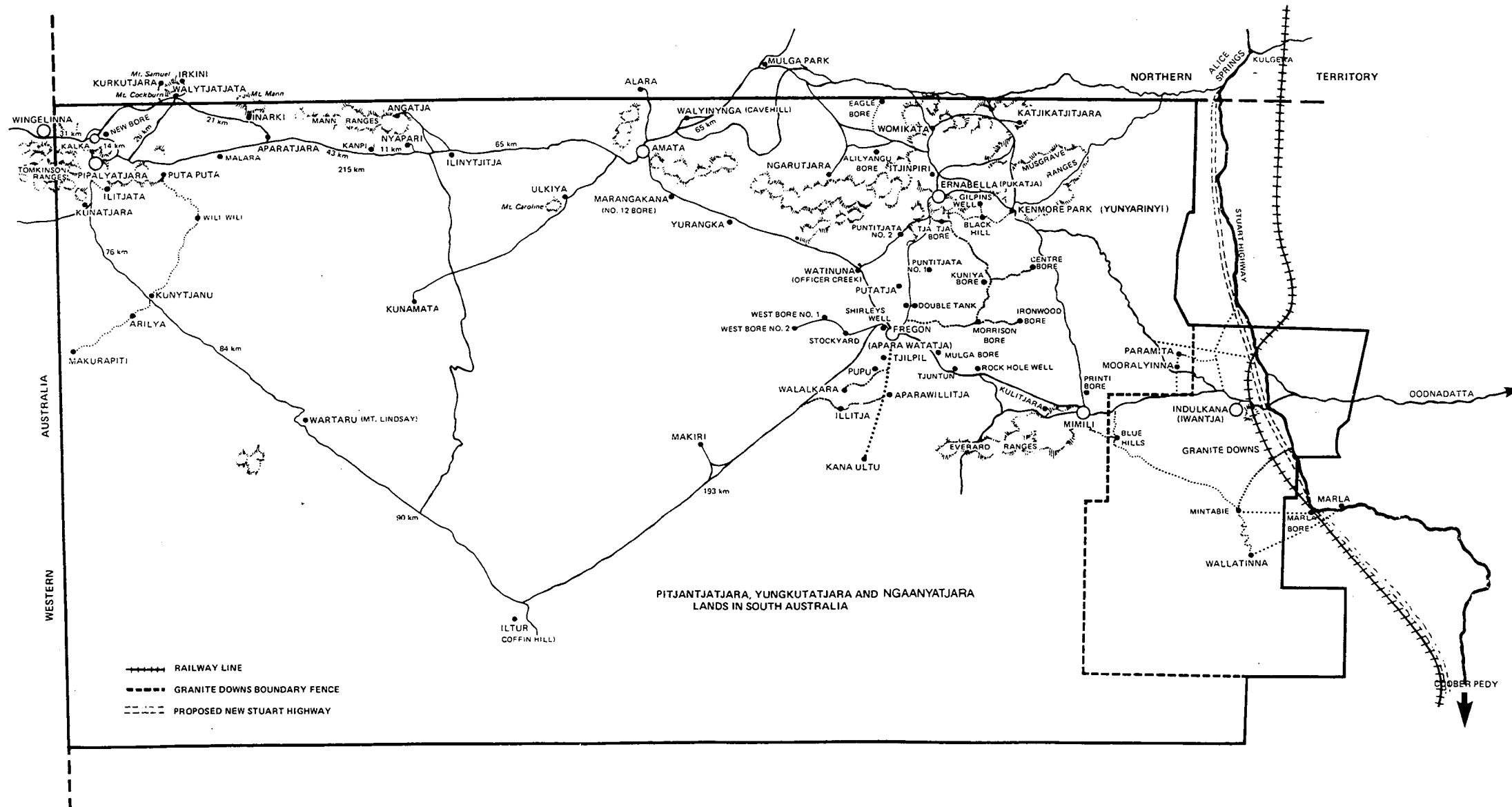
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31 December 1987

AP LANDS



LETTER OF TRANSMITTAL

UWANKARA PALYANYKU KANYINTJAKU (A STRATEGY FOR WELL-BEING)

COMMITTEE OF REVIEW ON ENVIRONMENTAL AND PUBLIC HEALTH WITHIN THE ANANGU PITJANTJATJARA LANDS

SAHC 08/141/211

31 December 1987

Dr W.T. McCoy
Chairman
SOUTH AUSTRALIAN HEALTH COMMISSION

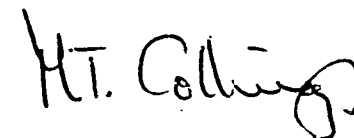
Mr Y. Lester
Chairman
NGANAMPA HEALTH COUNCIL INC

Dear Sirs

On 5 June 1986 the Minister of Health announced the appointment and terms of reference of the Committee of Review of Environmental and Public Health within the Anangu Pitjantjatjara (AP) Lands in South Australia.

We are pleased to present our Report.

Yours sincerely



Dr Malcolm Collings
CHAIRMAN



Mr Punch Thompson
CO-CHAIRMAN

For the Committee:

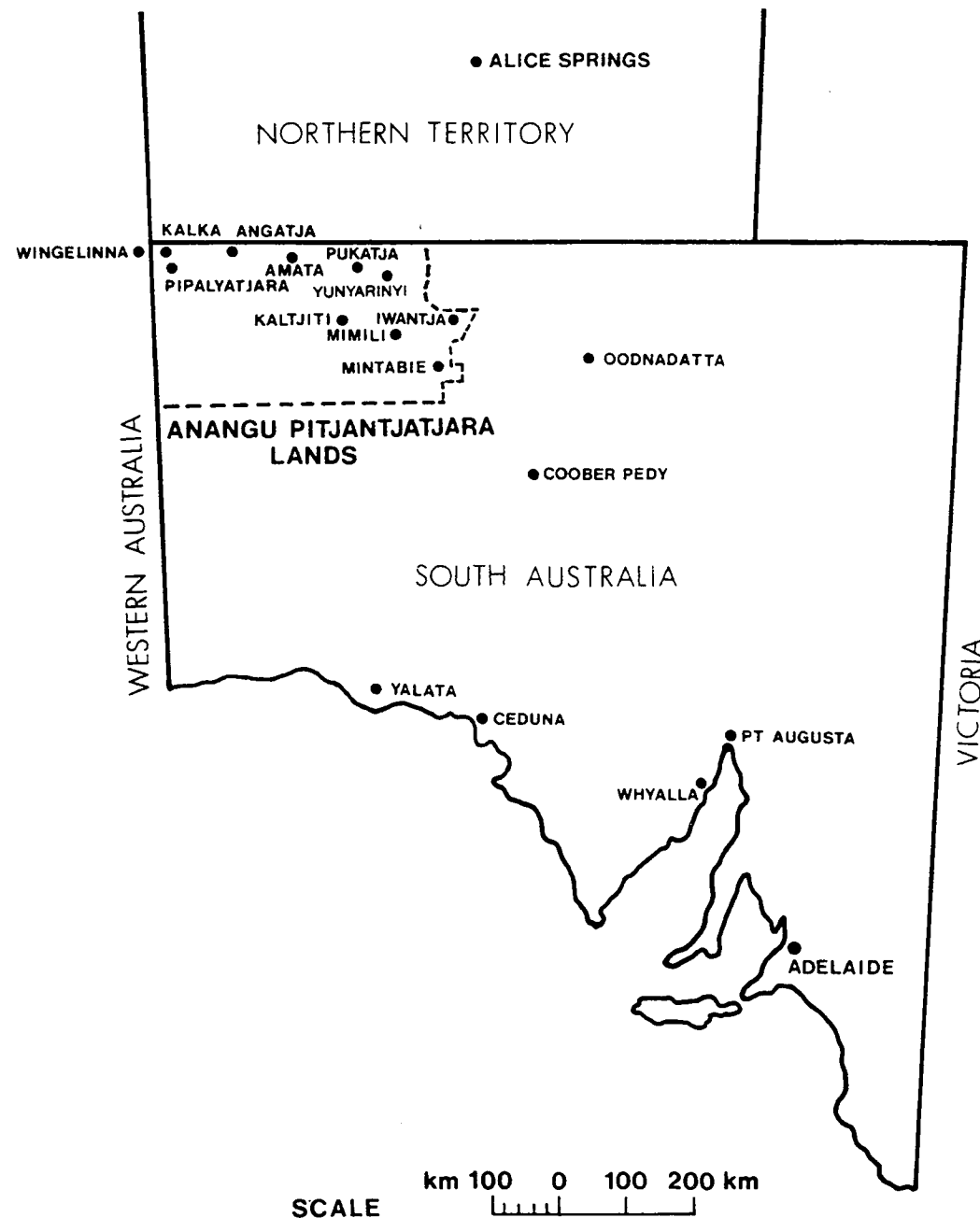
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Project Co-ordinator

Mr Glendle Schrader
Member



ANANGU PITJANTJATJARA LANDS

ACKNOWLEDGEMENTS

The Committee wishes to acknowledge with thanks the assistance of many people who helped in the Review, particularly Anangu residents of the various communities who facilitated the gathering of information about their living conditions, the Research and Development Team which carried out the collection, analysis and interpretation of community data and the Nutrition Study Team which assessed the nutritional needs of three communities.

We wish to thank the officers of various Government departments and non-Government organisations which met our requests for information and assistance.

We acknowledge the contribution of our Project Co-ordinator who provided the necessary continuity and administrative support for the Review.

We thank the members of the Health Surveying, Nutrition, Library, Health Promotion, Key Board and Drafting Sections of the Public Health Service for their valuable assistance.

The bulk of the financial resources needed for the Review had been provided by the Nganampa Health Council and the South Australian Health Commission. Financial support was also received from the Aboriginal Housing Board and the Aboriginal Development Commission.

Finally, we thank the following departments and organisations for their assistance in meeting the production costs of this Report: Aboriginal Development Commission, SA Department of Housing and Construction, Department of Technical and Further Education, Statewide Health Services Division (SAHC), Department of Community Welfare, Pitjantjatjara Council, Aboriginal Health Organisation and South Australian Housing Trust.

GLOSSARY OF TERMS & DEFINITIONS

ADC	Aboriginal Development Commission
AHB	SA Aboriginal Housing Board
AHO	Aboriginal Health Organisation, SA
Anangu	"our" people
AnTEP	Anangu Teacher Education Programme
AP	Anangu Pitjantjatjara (Body Corporate established by the SA Parliament)
APHIP	Aboriginal Public Health Improvement Programme
AWS	Anangu Winkiku Stores Inc
AWU	Aboriginal Works Unit (SA Department of Housing & Construction)
CED	Common Effluent Drain
CDEP	Community Development Employment Programme
CM and S	Community Management and Services
Community Councils	Independently Incorporated Community Organisations
DAA	Commonwealth Department of Aboriginal Affairs
DCW	SA Department for Community Welfare
Ernabella	English name for Pukatja Community
Essential Services	Water, electricity, sewerage and rubbish disposal and shelter.
Fregon	English name for Aparawatatja/Kaltjiti Community
Health Hardware	The physical hardware (water, taps, soap etc) as a prerequisite for healthy living practices
Homelands	Traditional areas of occupation and residency
Human Services Review	Report of the Committee of Review of the Delivery of Human Services to the Aboriginal Community in South Australia (South Australia 1987a)
Indulkana	English name for Iwantja Community
Kenmore Park	English name for Yunyarinyi Community
Miller Report	Report of the Committee of Review of Aboriginal Employment and Training Programmes (Australia 1985)
NT	Northern Territory
Ngaanyatjara	A specific linguistic group of Aboriginal people
NHC	Nganampa Health Council Inc
Ngura	Home
OAA	SA Office of Aboriginal Affairs
PC	Pitjantjatjara Council Inc
PHS	Public Health Service
PY Air	Pitjantjatjara/Yankunyatjara Air Service
Pitjantjatjara	A specific linguistic group of Aboriginal people
Piranpa	"white people"
R and D Team	Research and Development Team established by UPK
SA	South Australia
SAHC	South Australian Health Commission
SAHT	South Australian Housing Trust
TAFE	SA Department of Technical & Further Education
Tjukurpa	Anangu History, Law, and explanation of Life
Tjuta	Many
UPK	Uwankara Palyanyku Kanyintjaku (Environmental & Public Health Review)
WA	Western Australia
Wiltja	Aboriginal shelter, usually made of canvas, corrugated iron and wood posts
Wingelinna	English name for Irruntju Community
Yankunyatjara	A specific linguistic group of Aboriginal people

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STATEMENT BY THE SOUTH AUSTRALIAN HEALTH COMMISSION MEMBERS OF THE REVIEW COMMITTEE

The South Australian Health Commission members of the Review Committee agree with and endorse all recommendations on the technical solutions to the environmental and public health problems identified in this Review.

They are, however, unable to endorse the specific recommendations relating to AP's role as the predominant co-ordinating body for all services in the Lands. This is not to minimise the importance of enhanced management as a strategy for improving health, but reflects the view that information derived during the Review does not of itself identify a specific management solution.

Other enquiries designed specifically to address this issue are underway, or have been completed: they will allow further progress towards identifying the preferred management strategy.

Therefore, comments on regional management and the role of AP contained in Executive Summary (Ch. 1.1), Recommendations 2, 3, 4, 5, 6, 10, 14, 15, 17, 41, 42 (Ch. 1.2), and Management (Ch. 3) do not have the support of the South Australian Health Commission members of the Committee.



for SAHC members of
Review Committee

1.1 Executive Summary

Uwankara Palyanyku Kanyintjaku, the Review of Environmental and Public Health on the AP Lands, was initiated following a proposal from NHC to the South Australian Minister of Health. The Review was undertaken jointly by NHC, SAHC and AHO.

The Review Committee's main task was to assess the environmental and public health needs of the Aboriginal (Anangu) communities within the AP Lands and to develop an overall strategy to improve the situation. The membership of the Committee, its terms of reference and its administrative arrangement, are outlined in Appendix I of this Report.

During the course of the Review, the Committee held five meetings, three in Adelaide and two on the AP Lands, to discuss the progress of the Review and plan further actions as required. A Progress Report was distributed to members and their organisations in January 1987. A two-day workshop was held in Adelaide on 8-9 July 1987 to consider the findings and the final recommendations of the Review.

From the outset, the Committee recognised the importance of Anangu contributing to the research as well as the development phases of the Review. It established a Research and Development Team (R and D Team), consisting of two Anangu Research Officers: Mr Punch Thompson and Ms Nora Ward, as well as an experienced anthropologist, Mr Stephan Rainow, who speaks Pitjantjatjara and an architect, Mr Paul Pholeros, who has previous experience in design work in Anangu communities. The Team carried out an extensive and detailed survey of the living conditions and facilities in ten communities. In addition, Dr Paul Torzillo, who has worked on the Lands and has experience in Aboriginal health, assisted the Team in the interpretation of the findings and compilation of the Review Report.

The Review was formally sanctioned at an AP meeting in October 1986 at Kaltjiti (Fregon) community where Punch Thompson outlined the idea of the Review and initiated wide-ranging discussions about issues relevant to public health. In order to further promote awareness of the Review, a short video was prepared which was specifically designed for Anangu viewing.

Data collection was undertaken in three major areas:

(1) Field study

This involved a detailed survey of the living area of Anangu in all major communities and in a selection of Homelands. The survey was deliberately structured to support the health focus of the Review. For example, over half the items surveyed concerned the area around the house as it was obvious that this was the main living area. In the survey design, emphasis was placed on:

- safety (electrical, structural)
- services provided by the outside living areas
- services provided by the house
- population and demand placed on the services of house and yard.

As well as living areas, other aspects of communities, particularly stores and all essential services were studied.

The field work provided the focus of the Review for Anangu and the R and D Team undertook three tasks simultaneously. Their data collection was closely linked with an ongoing ground-level educational process. This involved placing the question of environmental and public health on the agenda of Anangu across the Lands. In addition the team identified urgent environmental problems and then triggered remedial action by Community Councils and staff.

(2) Nutrition study

This involved detailed analysis of dietary practices and the role of stores in communities. This study was conducted by nutritionists with extensive experience in Aboriginal communities, particularly in Pitjantjatjara society.

(3) Relevant data held off the Lands

The main sources were:

- Health information from NHC reports and also public health data from Australia or relevant overseas studies;
- Essential services information (PC);
- Health survey records (Health Surveyors, SAHC);
- Housing construction and maintenance for teacher housing (SA Teacher Housing Authority);
- Housing costs and maintenance and evaluation of past projects (AHB and SAHT);
- Maintenance costs (ADC);
- Funding (DAA).

The Report and recommendations were a result of analysis of all data and then extensive discussion between members of the research team and other working members of the Review.

The living area survey included 90 houses. On average there were 8.3 persons per house. On this basis an average Australian house (130 sq m) would be accommodating 15 people. Approximately 50 per cent of the population do not have housing, so that half the population are dependent on the other half for certain basic facilities. Whilst most houses had mains supply of cold water, failure of water control points within the house often resulted in poor access. On average only 50 per cent of all hot

water installations are able to supply hot water. In one community hot water is only available at 21 per cent of installations. The R and D Team noted that there was often a negative effect on all services if any one system failed. For example, in houses where hot and cold water outlets were functioning, a failed waste disposal system may well preclude effective use of those outlets.

The Report details findings and recommendations on a large number of topics relevant to public health.

These are:

- Methodology
- Findings of the field survey
- Housing
- Essential services - water, power, soft waste and hard waste disposal
- Nutrition
- Stores
- Personal income
- Homelands
- Education and training
- Community health education and promotion.

The Review has not attempted a comprehensive study of each area. However, it has highlighted those aspects which are directly relevant to the public and environmental health focus of the Review.

The recommendations of the Review have been directed at three groups. These are:

- Government and service agencies
- Anangu Pitjantjatjara
- Communities and their management staff.

The Review has identified the areas of public and environmental health that will require financial support by government. However, many of the recommendations that are directed at policy and organisational aspects would not require increased expenditures.

The major focus of the Review recommendations have been in three areas:

- (1) The Review has prescribed a list of healthy living practices and made recommendations for the health hardware necessary for these practices to be conducted

These healthy living practices have been prioritised in order of their likely importance in improving health status:

1. Washing people
2. Washing clothes/bedding
3. Waste removal
4. Nutrition
5. Reduce crowding
6. Separation of dogs and children
7. Dust control
8. Temperature control
9. Reduce trauma.

The major proposals relate to washing and cleaning of the living unit ie the group of people, their clothes, bedding and immediate living environment.

For each of these areas we have attempted to define the health benefits which are likely to ensue. We have described the current environmental inadequacies as determined by our survey and we have provided a range of detailed recommendations about the design, installation and maintenance of the health hardware necessary for these practices.

Importantly, in each proposal, there may be a threshold level or "critical mass" which must be reached before any health benefit is achieved. For example, washing a child two days a week may have no health benefit, rather than a lesser benefit, compared with washing the child every day.

- (2) The Review has emphasised the critical role of management in the maintenance of public health on the Lands

Public health is highly dependent on the planning, funding, installation, maintenance and utilisation of essential services and community utilities. All these functions rely on management at three levels:

- (i) local
- (ii) regional
- (iii) government and external agencies.

Effective management at one level is intimately dependent on the same process at each of the other levels. This is particularly true of the vital area of maintenance of public health facilities. Detailed recommendations have been made in regard to maintenance, in particular, the need to link maintenance funding to capital expenditure for all development on the Lands.

Management at the local level is critical for public health improvement. Every facility in the community relevant to public health is dependent on community management for its functioning. Generators, water systems and waste disposal all need to be paid for, installed and maintained. Once services break down they actually become a threat to public health. The services fail whenever management fails.

Participation in management structures at community level will allow real Anangu decision making to occur. This involves two issues:

- ° the setting of priorities;
- ° development of aims and objectives of programmes.

There are major problems in applying these community management principles at the local level. Firstly, in each community there are insufficient human and capital resources. The relatively small population means that individual settlements are unlikely to have sufficient numbers of external or indigenous skilled personnel to administer and implement all the

necessary programmes. Support for a regional body to co-ordinate the sharing of skilled personnel and expensive equipment would ensure that maintenance services are effective and cost efficient.

At present each community is required to negotiate with a long list of outside agencies and one consequence has been a chaotic state of both service delivery and maintenance. Also, in this setting, with agencies and individuals coming and going, meaningful communication and consultation are almost non-existent.

The Review has, therefore, recommended that AP, the land-holding body established by the SA Government, be the one to co-ordinate the planning and delivery of the various services covered by the Review.

At the State and Commonwealth level, an intersectoral approach is required to ensure that there is a co-ordinated response to the communities' needs and duplication of services and functions can be eliminated or reduced.

- (3) The Review has aimed to place public and environmental health high on the agenda of Anangu

It has aimed to provide information to Anangu about the prerequisites for healthy living and the likely health benefits of particular behavioural change. The Review has started the educational process by involving Anangu in all phases of this Review. It is essential that all Anangu communities understand the main findings and recommendations of the Review and that they are involved in decisions concerning the types of education programmes needed, appropriateness of the recommendations for their communities and assessment of any changes in lifestyle. There is a need for well planned and co-ordinated health education programmes in the school, health clinic and the general

community. The establishment of a Public Health Unit within NHC will facilitate these processes on the Lands.

We believe this Report provides the basis for a sensible and productive strategy, aimed at supporting Anangu who are seeking to improve their health and living conditions.

Before presenting its recommendations, the Committee would like to indicate its support for the following principles:

- ° It is a basic right of all Australians to have comparable access to an appropriate level of sustenance, shelter, health care and education (Australia 1985);
- ° In accordance with the Commonwealth Government policy on self-determination and self-management, Anangu communities and organisations should be assisted to formulate long-term development plans for organising and delivering their own services with adequate financial, administrative and professional support.

1.2 Recommendations

General

1. That management, at all levels from Community Councils to State and Commonwealth Governments, should monitor closely the health and living conditions of Anangu and that programmes to improve health and living conditions should be given the highest priority.

Government

2. That the appropriate State and Commonwealth agencies initiate discussions with Anangu Pitjantjatjara (AP) with a view to:

- (a) expanding the role of AP as a co-ordinating and resource body to Anangu communities in housing, essential services, health, education, welfare and other services on the AP Lands;
 - (b) providing AP with the administrative, technical and financial resources to be effective in its expanded role;
 - (c) recognising AP's role as the Anangu regional management body for AP Lands in administering the provision of services. (Chapter 3 Management).
3. That the State Government, in conjunction with the Commonwealth work with AP to establish funding arrangements that foster enhanced community control of administrative practices. Specifically:
- (a) that the present complex and unco-ordinated budgeting and expenditure methods of government agencies such as DAA and ADC be simplified;
 - (b) that, in the short term, funding of programmes be guaranteed for three years in order to allow for adequate consultation and for forward planning. (Chapter 3 Management)

Regional

4. That AP assume the role of Anangu regional management body for the AP Lands, administering and providing various services, including:
- (a) health, welfare, education and TAFE, building and public works, air transport, enterprises, and legal and anthropological services
 - (b) the planning, provision and maintenance of all houses and permanent structures on AP Lands;

- (c) the essential services: water, sewerage, electricity and refuse disposal;
 - (d) the operation and management of all community stores, using Anangu Winkiku Stores (AWS);
 - (e) establishment of a regional information unit to maximise the dissemination of information to communities;
 - (f) the development and administration of guidelines for the regular evaluation of public and environmental health programmes operating on AP Lands.
 - (g) AP's responsibilities relating to 4(a) to 4(f) be 'phased in' as resources, funding and staffing permit. (Chapter 3 Management)
5. In order for AP to fulfil this responsibility structural changes are required in its organisation:
- (a) that AP establish its executive office on the AP Lands;
 - (b) that AP develop a plan of management and development for the AP Lands;
 - (c) that AP develop its resources to enable it to suitably manage control and develop the AP Lands (Chapter 3 Management).

Community

6. That the policies developed by AP in conjunction with communities in health, housing, essential services etc be formally adopted by Community Councils and community staff be expected to implement them. (Chapter 3 Management)
7. That community work practices be systematised to minimise the loss of control inherent in "crisis" management, with particular attention to:

- (a) guidelines being established and adhered to for the prioritisation of work, especially in the areas of maintenance and essential services;
 - (b) systems being established for the regular monitoring and assessment of houses, waste disposal systems, stores etc so that rapid changes of circumstances can be accurately assessed;
 - (c) standardisation of procedures for community budget expenditures and of accounting practices across AP Lands. Setting up/establishing an open, up-to-date display of community budgets in communities would mean that "moneyline" matters could be scrutinised by the community as well as the Community Council. (Chapter 3 Management and Chapters 4.4.5 to 4.4.7 Essential Services, Maintenance, Planning and Co-ordination)
8. That communities seek ways to enhance communication and flow of information between community staff in the various sections of community management (the office, the clinic, the store, the school), and between staff and the members of the community at both formal and informal levels. (Chapter 4.4.7 Co-ordination of Resources)
- 9.
- (a) That a regional Public Health Unit of two people be established within the NHC to liaise between NHC, AP and Community Councils, monitor public health problems continuously and provide stimulus for appropriate action by Community Councils and AP.
 - (b) That the services and maintenance arm within each community eg essential services, building erection and maintenance, mechanical services and rubbish management be amalgamated into a

local Public Health Unit under the control of the local Community Council. (Chapter 4.4.7 Co-ordination of Resources)

Housing

10. That a Regional Building Policy aimed at addressing the problems with building contracts identified in the housing survey including those of maintenance, cost and environmental effectiveness, be developed through AP. This policy should address such factors as:
- (a) ensuring that budgets for building programmes take account of the need for planning, supervision and inspection;
 - (b) formulating and controlling the use of guidelines for appropriate design in building work;
 - (c) establishing and supervising the application of guidelines for methods of consultation by building contractors with Anangu clients;
 - (d) ensuring that adequate supervision of building work is carried out at various stages of construction and that the payment of funds to contractors is staged during construction;
 - (e) ensuring that particular attention is paid to the adequate construction of the soft waste disposal systems;
 - (f) ensuring that a maintenance factor is built into budgets to cover the two years immediately following the construction of a house. (Chapter 4.3 Housing)
11. That Government departments and agencies formulate a three year estimate indicating the following:
- (a) total funding and number of "housing units" to be provided with health hardware;

- | | | | |
|--|--|---|---|
| <p>(b) a breakdown of "housing units" into:</p> <p>(i) homelands, "housing/shelter";</p> <p>(ii) community housing;</p> <p>(iii) upgrading and major repair of existing stock. (Chapter 4.3 Housing)</p> | <p>valuable data on expansion rates and allowing adequate time for planning for increase in service capacity;</p> | <p>Level of nitrates in water:</p> <p>(a) 0-45 mg/litre - Suitable for all purposes by all people.</p> <p>(b) 46-100 mg/litre - Suitable for all purposes and people except bottle fed infants under six months of age.</p> <p>(c) Over 100 mg/litre - Not suitable for human consumption or the preparation of food.</p> | <p>sled-type bins, which reduce the possibilities of back injury for rubbish workers;</p> <p>(b) that adequate numbers of rubbish receptacles be placed immediately outside stores and in other areas where people congregate;</p> <p>(c) that stores examine ways to reduce the amount of packaging that is not bio-degradable, and where practicable, encourage the return of cans and bottles through the use of deposits;</p> <p>(d) that stores be equipped with burn-off facilities in the form of metal-caged, sled-type bins. (Chapter 4.4.4 Hard Waste Disposal)</p> |
| <p>12. That the housing model should recognise the essential need for financing health hardware. (Chapter 2 Health Hardware and Chapter 4.3. Housing)</p> | <p>(b) determination of the frequency of malfunctions to prevent the need for any major emergency work;</p> <p>(c) remote monitoring of domestic use of services in order to reduce the level of intrusion of current survey techniques. (Chapter 4.4 Essential Services)</p> | <p>(These values related to persistent exposure eg three - month average. In areas above 45 mg/L, infants who are bottle-fed should be provided with low-nitrate water. (Chapter 4.4.1 Water Services)</p> | <p>(b) that stores be equipped with burn-off facilities in the form of metal-caged, sled-type bins. (Chapter 4.4.4 Hard Waste Disposal)</p> |
| <p>13. That funding agencies accept the funding schedules suggested by the Review and by so doing acknowledge the critical nature of funding timing for the planning and production of health hardware. (Chapter 4.3 Housing)</p> | <p>17. That the introduction of new works follow accepted regional guidelines as set down by AP with special attention to consultation, with particular attention to the following:</p> | <p>20.</p> | <p>22. That dump management plans be developed and adhered to and resources of the AP Roads Programme be made available for the construction of rubbish pits. (Chapter 4.4.4 Hard Waste Disposal)</p> |
| <p>14. That the process for consultation with Anangu (and checklist) recommended by the Review, affecting the design and production of health hardware be adopted by AP. (Chapter 4.3 Housing)</p> | <p>(a) the provision of essential services ie environmental health hardware, be matched in sophistication to the level of maintenance available and that the maintenance be financially linked to the construction of any structure;</p> <p>(b) the three levels of essential service maintenance ie daily, periodic and breakdown be linked in a common maintenance strategy handled by AP. (Chapter 4.4, Essential Services)</p> | <p>(a) That rubbish disposal be placed under the heading of essential services, and receive funding as part of the CM and S budget;</p> <p>(b) That rubbish disposal be recognised as a municipal function and that workers be employed on a full-time basis as part of a local Public Health Unit and not as part of the CDEP programme;</p> <p>(c) That capital funds be made available for providing a local Public Health Unit with equipment for rubbish collection and disposal. (Chapter 3 Management and Chapter 4.4.4 Hard Waste Disposal)</p> | <p>23. That funds be made available in the establishment phase of homeland development for the provision of adequate rubbish disposal facilities. (Chapter 4.7 Homelands)</p> |
| Essential Services | | | |
| <p>15. That a group of suitably qualified people, such as electricians, plumbers and builders should be employed to work, and be resident, in various communities, but their work should be co-ordinated and monitored on a regional basis, and their performance be monitored by AP. (Chapter 3 Management and Chapter 4.4.7 Co-ordination)</p> | <p>18. That priorities for the maintenance program for essential services in the communities be given to:</p> | <p>21. The Review has found that the use of drums as rubbish receptacles is unsatisfactory and recommends:</p> <p>(a) that alternative methods of rubbish collection be explored, particularly with regard to:</p> <p>(i) receptacles that are dog-proof and wind-proof;</p> <p>(ii) non-lift receptacles, such as</p> | <p>Nutrition & Store Management</p> <p>24. That a comprehensive nutrition policy which includes measurable aims and objectives be developed and implemented by NHC for communities. (Chapter 4.5 Nutrition and Community Stores)</p> <p>25. That a nutritionist be employed by the Nganampa Health Council on a consultancy basis to be involved with the:</p> <p>(a) development and implementation of Anangu Pitjantjatjara nutrition policy;</p> <p>(b) nutrition education of health and other staff;</p> |
| <p>16. That correct monitoring of electrical, water and other resources be undertaken to achieve the following:</p> <p>(a) determination of usage rates matched to population figures to enable measurements of development rates as well as providing</p> | <p>(a) the safety aspect, particularly electrical faults;</p> <p>(b) the health aspect, such as blocked toilets and drains and problems in the supply of hot and cold water. (Chapter 4.4.5 Maintenance)</p> | <p>19. That the SAHC adopt these new guidelines on Drinking Water Quality:</p> | <p>(a) development and implementation of Anangu Pitjantjatjara nutrition policy;</p> <p>(b) nutrition education of health and other staff;</p> |

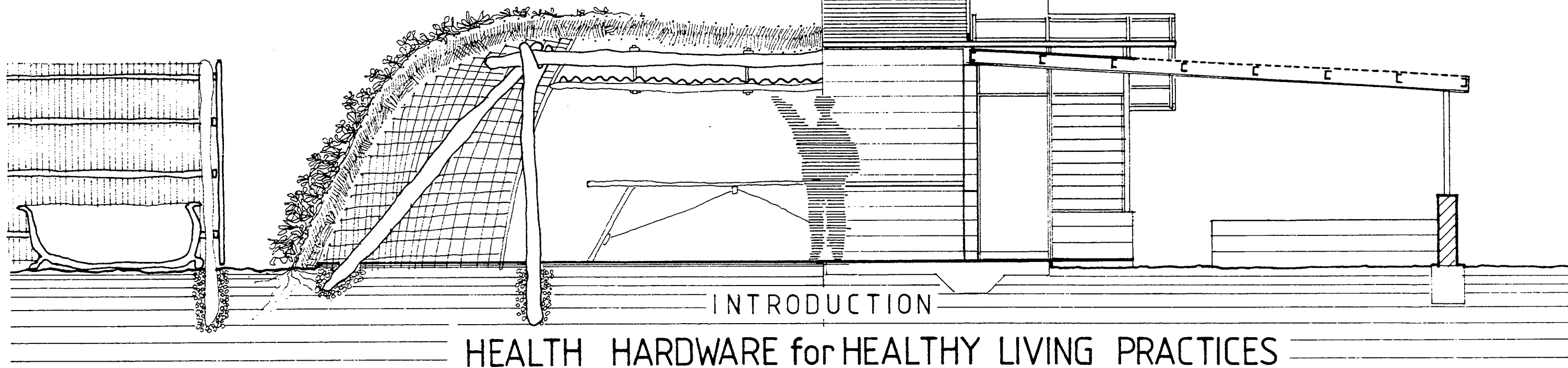
- (c) liaison between stores, health service and schools;
- (d) co-ordination of community nutrition and health education programmes;
- (e) support of store managers to promote nutritionally desirable foods in stores. (Chapter 4.5.7 Nutrition Intervention Strategies)
26. That nutrition education programmes should be formulated with regard to the principles outlined in 4.5.7 (Chapter 4.5.7 Nutrition Intervention Strategies)
27. That a store policy be developed as part of the comprehensive nutrition policy which include principles of:
- (a) reducing total sugar intake;
- (b) purchase of lean meat and meat alternatives;
- (c) maintaining high level of choice in foods available;
- (d) display and promotion so as to encourage good dietary practice. (Chapter 4.5.7 Nutrition Intervention Strategies)
28. That AWS be responsible for appointment of all store managerial staff in consultation with Community Councils. (Chapter 4.5.8 Store)
29. That an orientation programme for store managers be developed by NHC together with AWS and all Store Managers undergo this orientation programme. (Chapter 4.5.8 Store)
30. That store management should be standardised on AP Lands to allow for greater career opportunities for Anangu store workers and a pool of store workers on the AP Lands be developed. (Chapter 4.5.8 Store)
31. That stores should stock a basic list of products based on:
- (a) food stock recommendations as indicated in the Nutrition Study (see Chapter 4.5 Nutrition Table 4.5.5);
- (b) utensils and equipment necessary to maintain a healthy living area and healthy living practices for families and evaluation of these two aspects of store functions as well as calculation of nutrients available for consumption be performed on a regular basis. (See Chapter 4.5.9 Hardware)
32. That stores be utilised as a source of health information. (Chapter 4.5.8 Store)
33. That a proportion of store profits be allocated to benefit community health eg by subsidising healthy foods and/or health hardware items. (Chapter 4.5.8 Store)
34. That chilled water dispensers, placed just outside the stores, be provided as an alternative to soft drinks and other products containing sugar. (Chapter 4.5.7 Nutrition Intervention Strategies)
35. That vegetable seeds be available in communities through the store. (Chapter 4.5.9 Hardware)
36. That efforts be made to increase the availability and consumption of nutritious bush foods through proper land management, horticulture and animal husbandry. (Chapter 4.5.6 Conclusion)
37. That a follow-up dietary survey be planned to evaluate the impact of the Review recommendations. (Chapter 4.5.5 General Comments)
- Homelands**
38. That access to homelands be assured through:
- (a) providing and maintaining roads to homelands;
- (b) constructing airstrips to service homeland areas where possible;
- (c) including an item for communications facilities, in the form of telephones or portable radios, in homelands budgets. (Chapter 4.7 Homelands)
39. That homelands be assured of a secure water supply system through:
- (a) supporting the drilling of additional bores in homelands where supply is uncertain;
- (b) supporting the establishment of a sound water reticulation system in homelands which includes both purchase and installation costs. (Chapter 4.7 Homelands)
40. That funds be made available for the construction and maintenance of adequate housing and associated services on homelands such that development on homelands avoid systems which require regular maintenance or are expensive to run, for example, flush toilets, diesel water pumps and electrical generators. (Chapter 4.7 Homelands)
41. That Homeland Councils, in conjunction with AP and funding agencies, evolve a plan for the development and management of homelands, which ensures that:
- (a) in the establishment phase, homelands are given the necessary support in the form of appropriate levels of funding and assistance from resource personnel;
- (b) the priority in funding and support is given to homelands which are regularly occupied;
- (c) homelands which, for personal or cultural reasons, are temporarily unoccupied, after a death for example, resume normal levels of funding and servicing once occupation is re-established. (Chapter 4.7 Homelands)
42. That the feasibility of establishing a land management policy and programme, similar to that existing in the Uluru National Park, be investigated.
- This should take into account the facts that:
- (a) the homelands movement needs a land management policy and programme, and dialogue between AP, the Australian National Parks and Wildlife Service and the South Australian National Parks and Wildlife Service could assist in the establishment of such a programme and policy;
- (b) a "ranger" programme would re-inforce and formalise the value of traditional management techniques, re-establish old people as traditional "trainers" and reinforce traditional techniques of knowledge exchange by placing them in the correct context;
- (c) a "ranger" programme could provide appropriate training and work in the area of land management for people wishing to be active and mobile across their traditional lands;
- (d) the plan might include provisions for the establishment of the infrastructure to handle controlled tourism if it becomes an acceptable and viable option to Anangu. (Chapter 4.7 Homelands)

Training

43. That the Departments of TAFE and Education should investigate the feasibility of establishing a Pitjantjatjara College in the AP Lands to act as a teaching and resource centre, conducting secondary, post-secondary and vocational courses. (Chapter 4.8 Education and Training)

Community Health Education & Promotion

44. That health promotion and education programmes be formulated with regard to the following principles:
 - (a) programmes should involve the transfer of information to Anangu and the promotion of changes in relevant health behaviours, particularly the nine healthy living practices;
 - (b) there should be co-ordinated effort by community workers in community health education/promotion programs;
 - (c) the health professional's role is to advise Anangu about the likely benefit to health which would result from the proposed behaviour change. (Chapter 4.9 Community Health Education and Promotion)
45. That the findings of this Review form the basis of future environmental health and community health education programmes. (Chapter 4.9 Community Health Education and Promotion)
46. That NHC continue to investigate the means of improving dog health eg by control of dog parasites and sterilisation of female dogs by injectable agents. (Chapter 2 Health Hardware)



Anangu ill-health is well documented. Children suffer a complex of infectious diseases together with generally mild to moderate growth failure in the first three years of life. This illness profile is similar to that of children in developing countries. Mortality rates for Aboriginal children have markedly reduced in the last 20 years but attack rates and morbidity of infectious disease are extremely high. Adults have a high prevalence of 'the lifestyle diseases' - obesity, hyperlipidaemia, diabetes and vascular disease.

The AP Lands has a population of approximately two thousand Anangu. However, the level of disease prevalence and morbidity requires health service resources appropriate for a much larger population. For example, there is an 80 fold excess, amongst Central Australian Aboriginal children, for hospital admission with severe pneumonia. The NHC data reveal an admission rate for pneumonia of 122 per 1,000, higher than that of many developing countries. Most childhood acute respiratory infections are managed in communities without hospital referral. Thus the burden of childhood respiratory infection for Anangu is equivalent to that in a caucasian population of at least 160,000 people. (i.e. 80 x 2,000). Similarly the excess of diabetes amongst Anangu over 20 years of age is estimated to be at least 6 to 8 fold or equivalent to that in a caucasian population of 12-16,000 people. These sort of data need to be considered when assessing the appropriate (or just) allocation of health resources to Aboriginal communities.

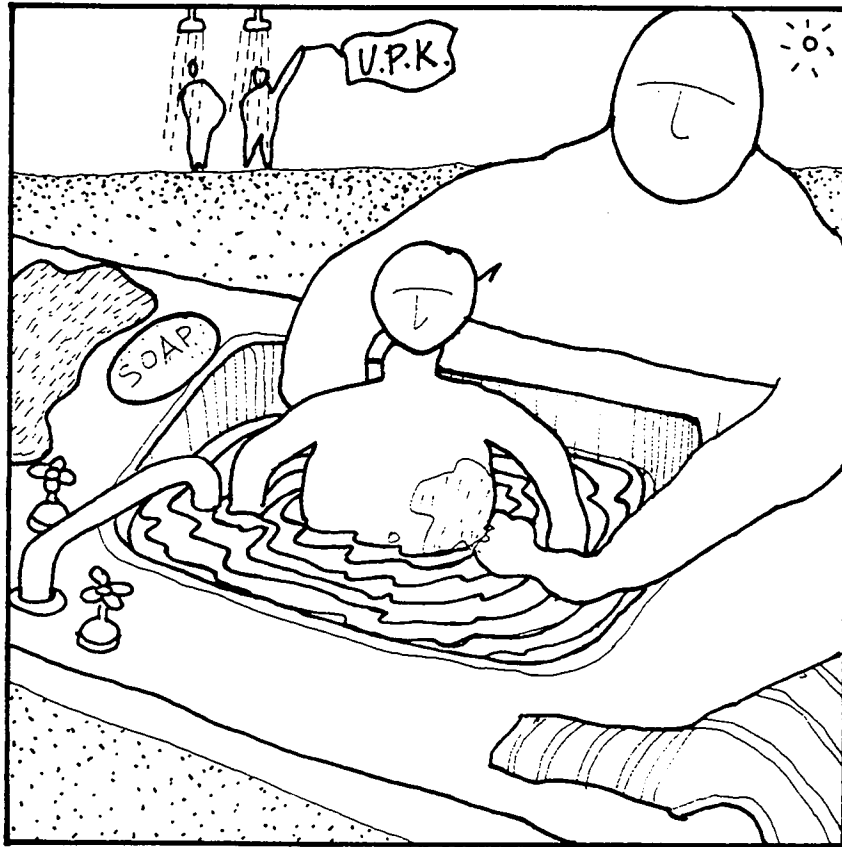
The history of public health demonstrates a relationship between good living conditions and good health. We have contributed a list of 'healthy living practices' and their necessary health hardware. There are no definitive studies which establish that these practices will lead to defineable changes in health. However, the current state of knowledge of public health would support each of these proposals. We have prioritized the

proposals in order of their likely importance in improving health status. The major proposals relate to washing and cleaning for the living unit ie. the group of people, their clothes, bedding and immediate living environment. It is likely that the effect of any one proposal is related to the effects of at least some of the other proposals. In addition, in each proposal, there may be a 'threshold level' or 'critical mass' which must be reached before any health benefit is achieved. For example, washing a child twice a week may have no health benefit rather than a lesser benefit than washing every day. Similarly, eating vegetables 3 days a week without changing any other dietary practice may have no health benefit at all.

The review has not attempted to prescribe a 'model' Aboriginal house. We do not believe that such an entity exists. Rather, we have outlined the principles by which any community building (housing or public utility) should be constructed. The principles involve all steps from design to utilization. In particular we have emphasised that the primary consideration in 'housing' development should be the delivery of effective health hardware.

A major finding of the review is the crucial role of management in the maintenance of public health on the lands. Every utility in the community, relevant to public health, is dependent on community management for its functioning. Generators, water systems, waste disposal, clinics all need to be paid for, installed and maintained. Once services break down they actually become a threat to public health. These services fail whenever management fails.

Healthy living practices are impossible without the necessary health hardware (including income). However, usage is the final link in the pathway. Behavioural change is necessary if Anangu are to live healthy lives in the new environment of permanent camps and houses.



1. WASHING FACILITIES FOR CHILDREN UNDER 5 YEARS

WASHING FACILITIES FOR ADULTS

Washing facilities for children under 5 years

The facilities for every young child to be washed twice every day, and to frequently wash hands and face, are likely to reduce the prevalence of the four most common childhood illnesses.

- (i) Diarrhoeal and respiratory disease are the major causes of morbidity amongst Aboriginal children. They are by far the major cause of presentation to N.H.C. clinics and hospitalization in Alice Springs. They also play a major role in the malnutrition experienced in the first three years of life. Almost one third of Pitjantjatjara children are admitted to hospital for diarrhoea in the first three years of life. Diarrhoeal disease is well known to be spread by faecal-oral transmission. Washing children can be predicted to reduce the prevalence and spread of disease.

- (ii) Young Aboriginal children in Central Australia are admitted to hospital for pneumonia at least 30 times more commonly than Caucasian children. Pitjantjatjara children have a hospital admission rate of 122 per 1,000 for pneumonia even though most cases are managed in the community. Respiratory disease is primarily spread by aerosol droplet transmission. However, amongst Aboriginal children it is likely that profuse nasal discharge acts as a source of respiratory infection both for the individual child and for other children in contact with this child. In Papua New Guinea it has been shown that some organisms which cause pneumonia in young children may be spread by hand contact. This mode of transmission is likely to be even more common in Aboriginal children who have more nasal discharge and "face" secretions than Papua New Guinea children. Washing will reduce the presence of infected secretions on the face and may reduce transmission both by aerosol and by direct contact.

- (iii) Skin infection is one of the most common problems of Aboriginal children. It is a cause of chronic discomfort and illness in many children. On occasions this causes immediate complications which necessitates antibiotic treatment and sometimes hospitalization. Skin infection can be a precursor to kidney disease (glomerulonephritis) which can be fatal in adult life or cause chronic disability requiring lifelong medical care. Chronic renal failure is much more common in Anangu society than in white Australians. The most important feature of prevention of skin infection is regular washing.

- (iv) Trachoma is endemic amongst Anangu and at least two thirds of young children seem to have active disease. Trachoma is known to be associated with poverty and poor living conditions. Although a recent study in the Northern Territory showed no benefit from face washing, other studies have shown a reduction in prevalence with regular face washing.

Washing facilities for adults

- (i) Skin infection is extremely common amongst adults and it is likely to be reduced by regular washing. This will reduce:
 - (a) the level of scabies in the community
 - (b) the prevalence of kidney disease which occurs as a consequence of skin infection
- (ii) Diarrhoeal disease will be reduced because of reduction in transmission of organisms, particularly between adults and children

Regular washing is less important for the health of adults than for children. However, the behaviour change of regular washing for children, will only occur if at least, young adults, also change their behaviour patterns.

1 WASHING FACILITIES PRIMARILY FOR CHILDREN UNDER 5 YEARS

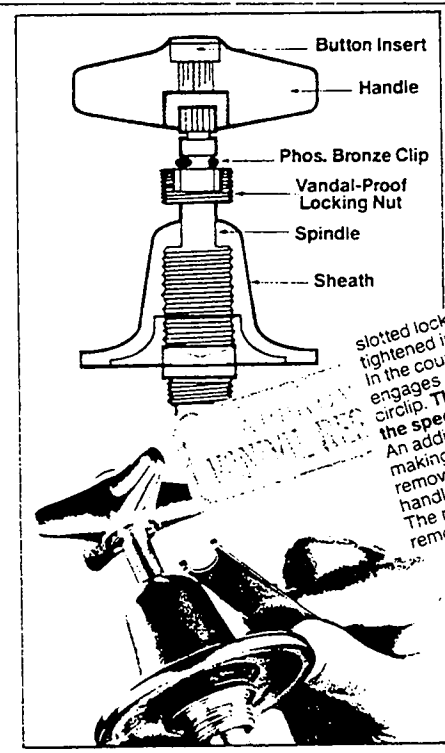
DESIGN IDEA

DETAILS / PRODUCTS

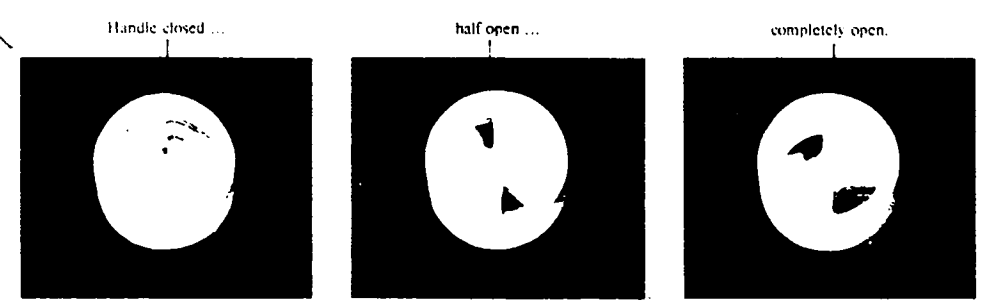
SURVEY RESEARCH

Hot and cold water with washing facilities particularly aimed at children under 5 years.

- i) Guaranteed community water supply.
- ii) Independent house or camp water supply.
- iii) Secure piping. Any exposed pipe to be galvanised steel not copper or P.V.C. Well encased or protected copper would be ideal
- iv) "Vandal proof" taps (Donson or similar) to ensure handles O.K.
- v) Ceramic cartridge taps (without washers and seats) to avoid deterioration from high salt water, leading to malfunction and water wastage.
- vi) Protected hot water units.
 - a) Solar roof mounted preferably on roof pitch, not stands on the roof. Galvanised mesh screening to protect solar panels.
 - b) Electric units to be protected in screened enclosed or store area.
 - c) Chip heaters securely mounted and plumbing protected.
- vii) Instead of handbasins use laundry tubs enabling easy washing of young infants.
- viii) Drainage and ventilation to encourage continued use of water



Anti-Vandal system features a slotted locking nut on the tap spindle which is tightened into the underside of the tap handle. In the course of being tightened the nut engages and mates with a phosphor bronze circlip. **The nut can only be undone by using the special locking spanner provided.** An additional safeguard has been provided by making the button insert (which is usually removable) as an integral part of the tap handle. The recessed slotted locking nut can only be removed by using the special locking spanner.



Two ceramic discs embedded in a cartridge glide on each other and smoothly permit the water to flow true to the position of the handle.

Two extremely hard ceramic discs in a cartridge. These discs are practically immune to wear and tear caused by impurities in the water supply. Sand or metal particles cannot get into rubber washers to cause abrasions and leaks. The principle of ceramic discs made famous in millions of installations of ccRamix single lever mixers now also in dual handle fittings of enormous durability.

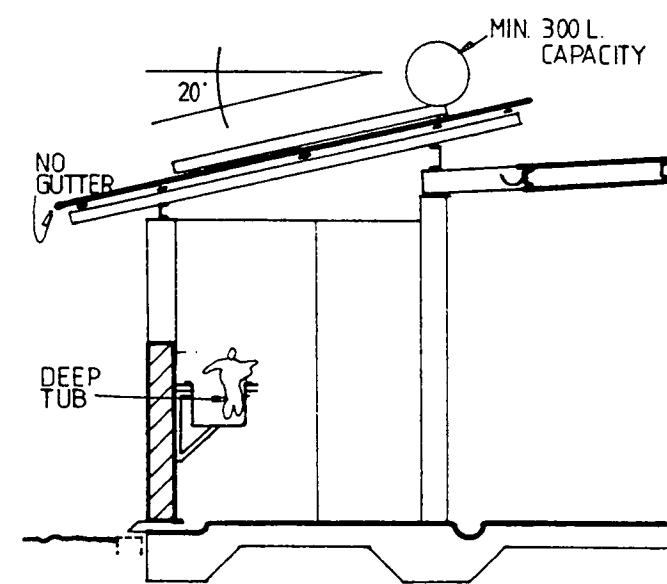
Only 14% of houses have any tanks providing an independent water supply. Some of these are inoperative due to tap failures.

Only 60% of all cold water supply installations are working. Main failure is in the area of taps, particularly handles and washers.

Only 45% of hot water supply installations are functioning. Older solar units suffer from poor roof mounting and panel breakage. Generally the capacity of the units is far too low - considering the population of each house is more than eight people. A minimum capacity should be 300 litre (66 gallon) not 80-100 litres which is common throughout the communities.

Personal Health Hardware

- Soap
- Washers
- Towels
- Spare basin plugs



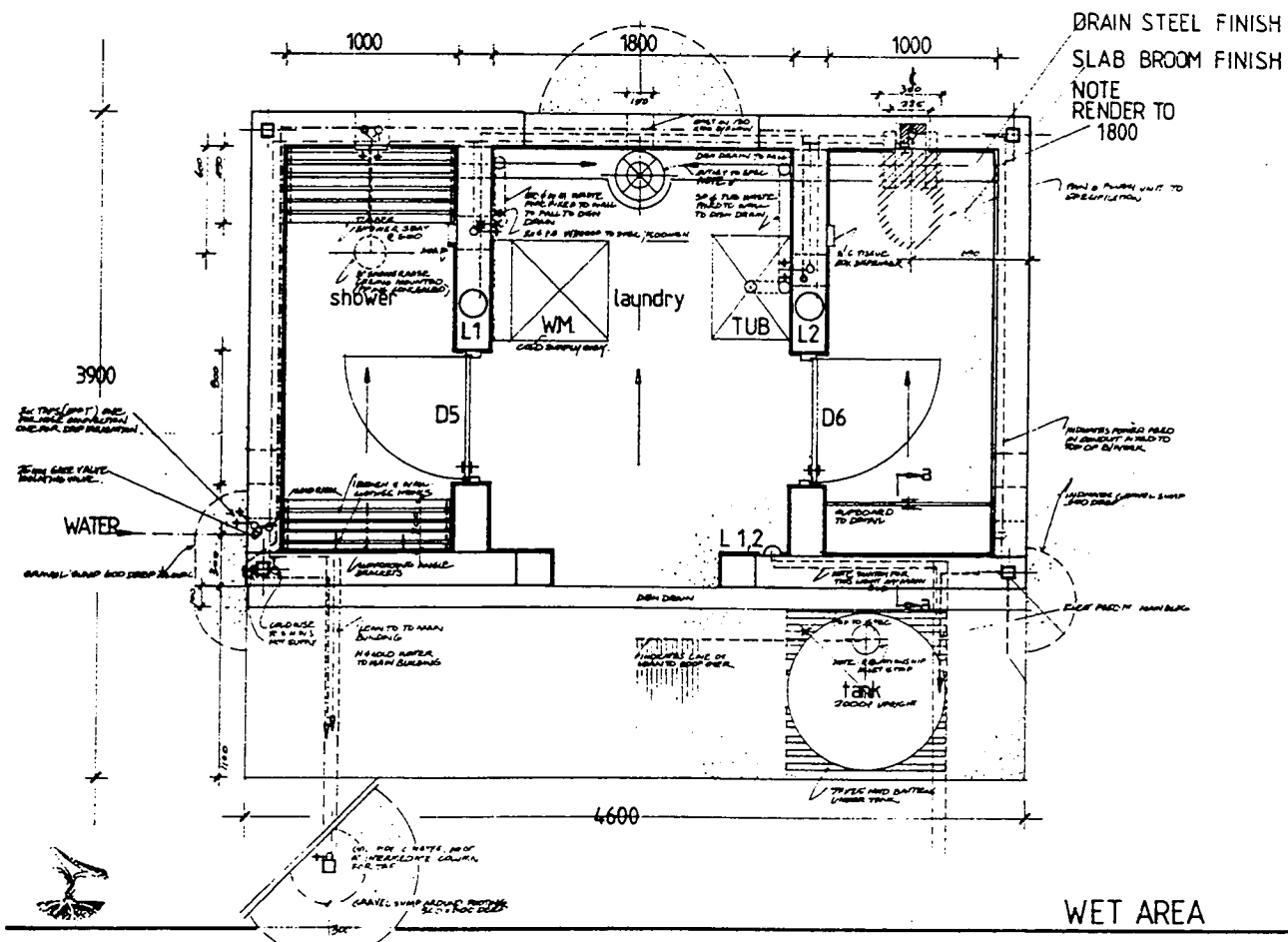
1 CONT. WASHING FACILITIES

Shower/washing facilities for adults

Shower/washing facilities for adults, if only to set up behaviour pattern for children to follow.

- i) Privacy ie. no partition walls with feet showing.
- ii) Shower seats for older people.
- iii) Clothes hanging within shower.
- iv) Separate men's/women's showers when attached to services buildings such as clinic/craft room etc.
- v) Water requirements as in above.

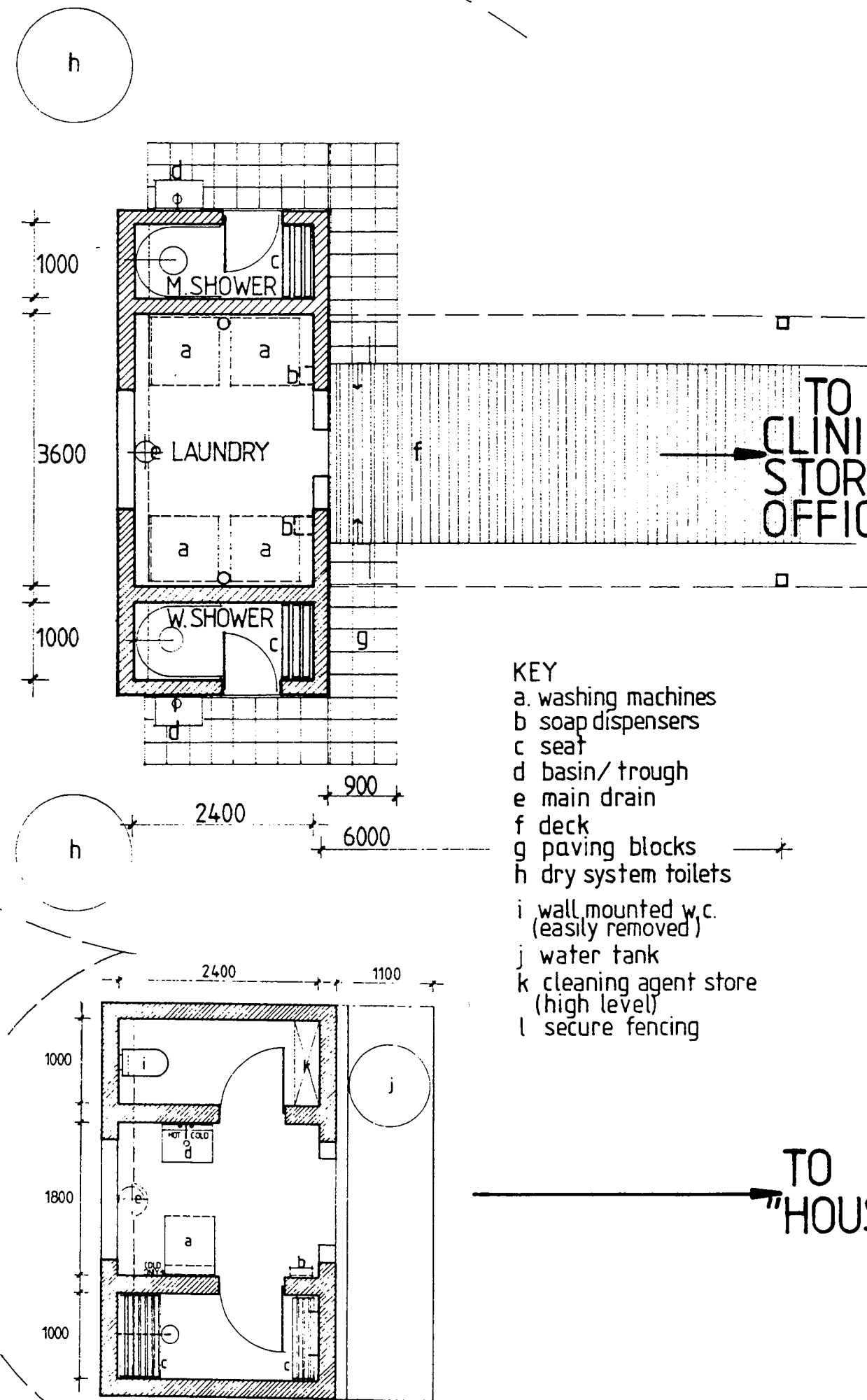
Note: Single lever mixer taps for showers, where one control can vary water from cold to hot, could be beneficial to avoid scalding.

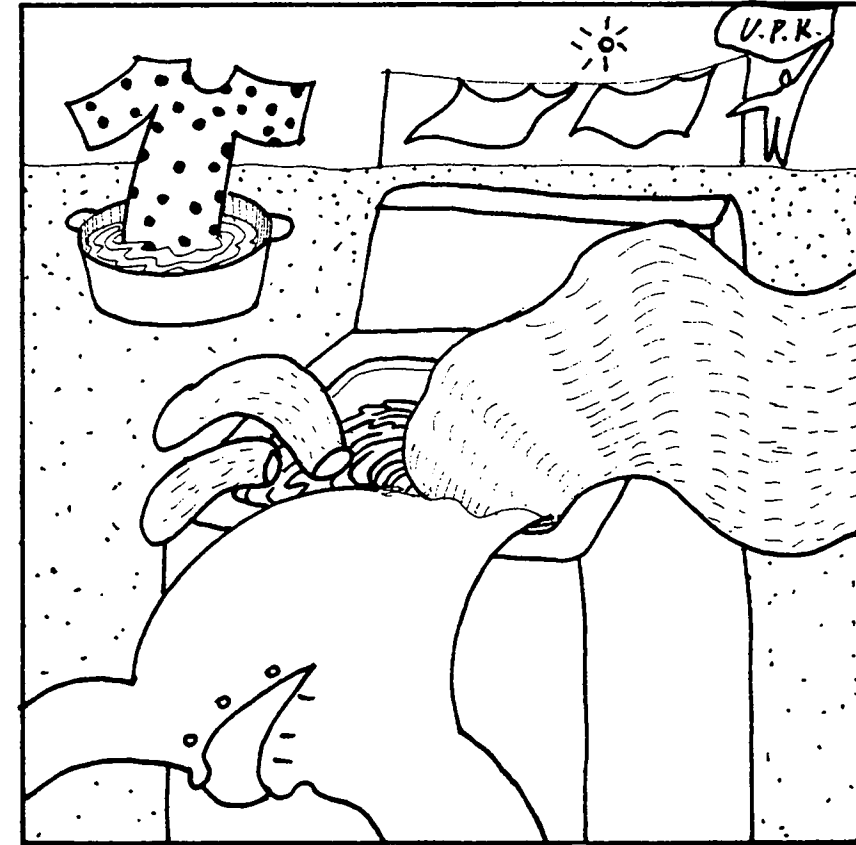


Personal Health Hardware

- Soap
- Washers
- Towels
- Basin plugs

WET AREA DETAILS





2. WASHING OF CLOTHES AND BEDDING

Clothes washing will reduce exposure of adults and children to faeces, secretions and the scabies mite.

This is likely to reduce disease, in particular

- (i) Skin infection, particularly scabies
- (ii) Diarrhoeal disease

2 WASHING of CLOTHES and BEDDING

Clothes washing facilities DESIGN IDEAS

DETAILS / PRODUCT REQUIREMENTS

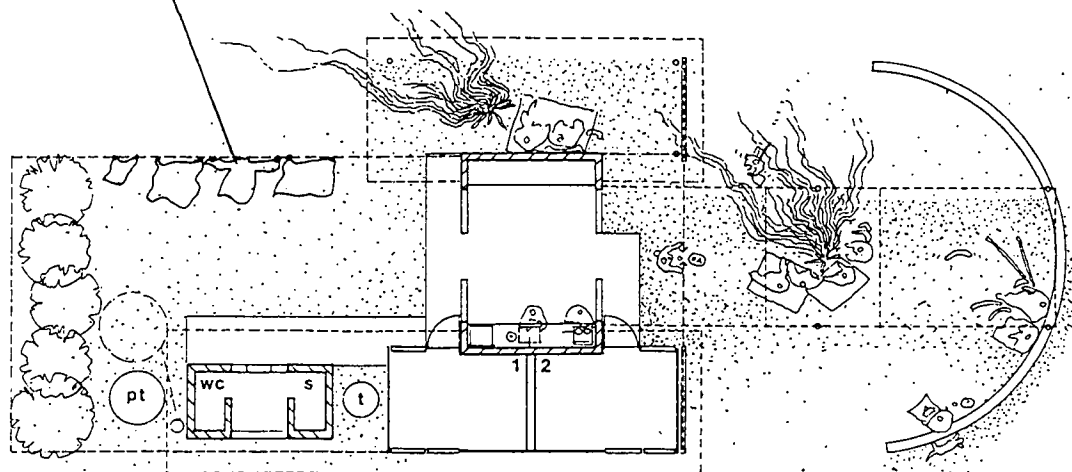
Clothes washing facilities for every family. (or a minimum of one commercial washing machine for every 20 people).

- i) Coin operated commercial machine for each house could provide wet area maintenance. (say \$2/wash X 5 / week = \$10 x 52 weeks = \$520 / year.)
- ii) Washing machines should use cold water only. Hot water should be a priority for washing people. Machines should be permanently plumbed in with their own waste not that of a laundry tub (tubs should have priority for child washing).
- iii) Coin operated soap dispensers are essential with each washing machine so as to not "over soap" washing machine and drainage system, and also to allow safe storage of soap powder.

Personal Health Hardware

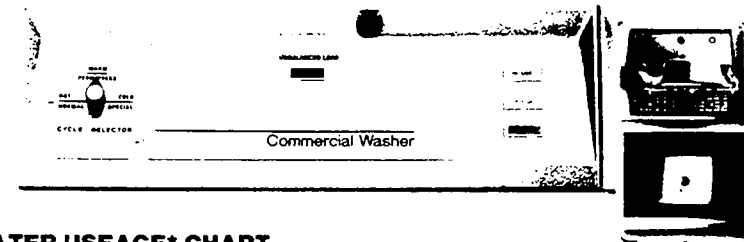
- Metal tubs with handles
- Soap suds (supplied to machines by store)
- Clothes line

YARD FENCING FOR CLOTHES DRYING



FOR HIGH SALT WATER

- 1 LOW WATER USAGE
- 2 COLD WATER RINSE
- 3 SUPERIOR RUST PROTECTION

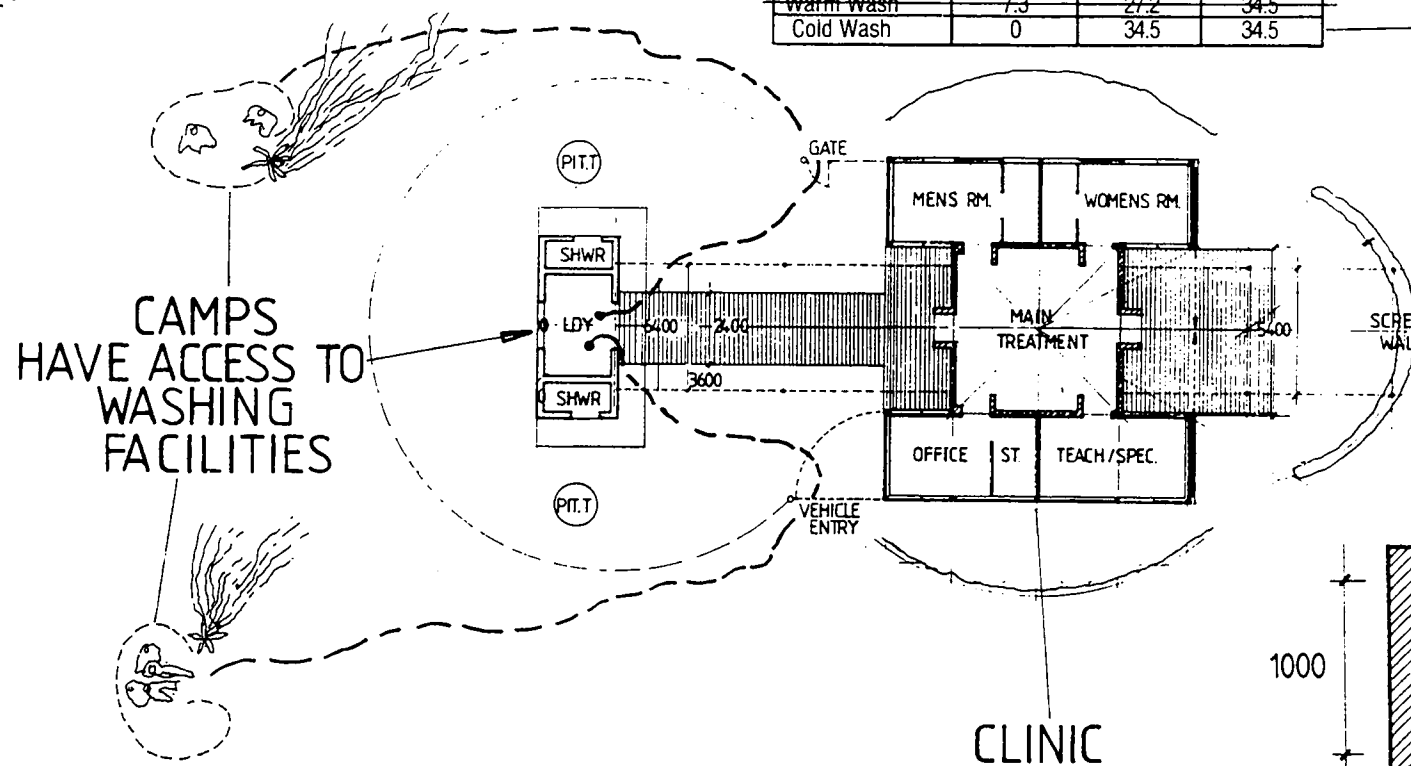


COIN BOX SECURE [DROP IN NOT] PUSH TYPE

WATER USAGE* CHART

Cycle Selection	Water Supply		Total
	Hot	Cold	
Hot Wash	16.1	18.4	34.5
Warm Wash	7.9	27.2	34.5
Cold Wash	0	34.5	34.5

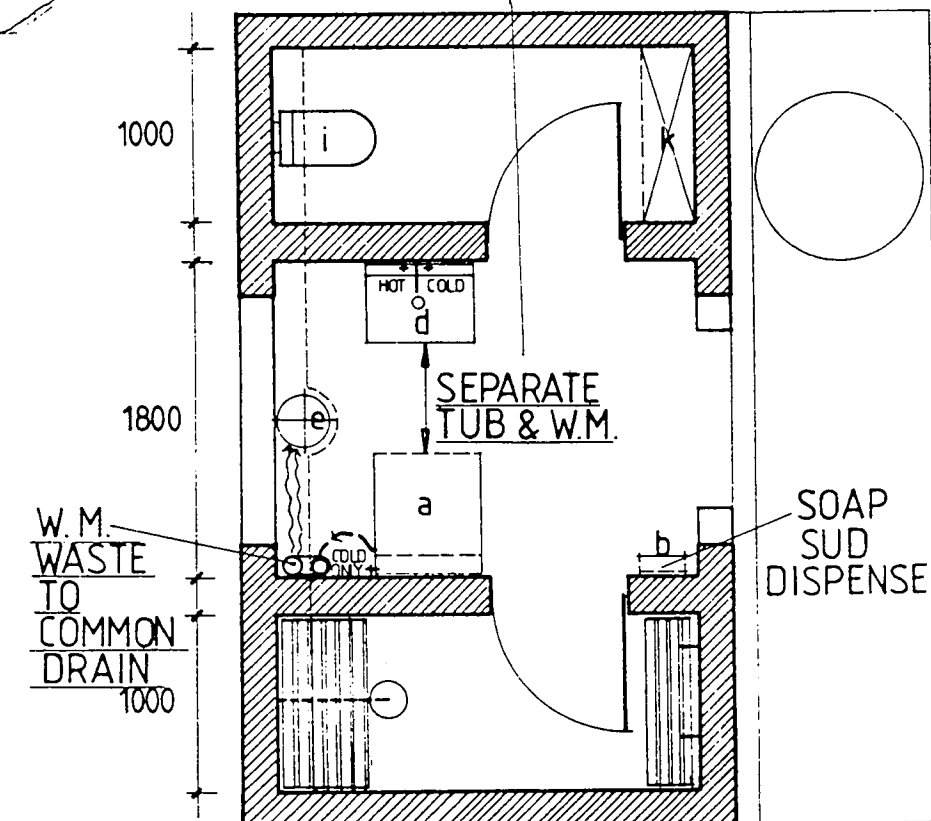
LOW WATER USE

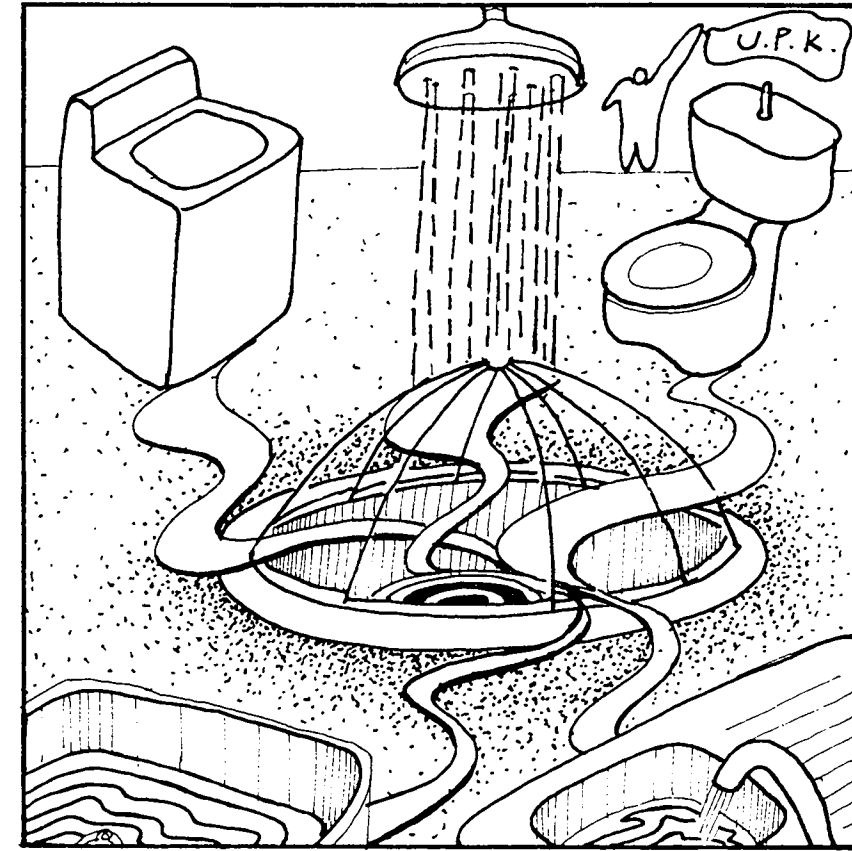


CAMPS HAVE ACCESS TO WASHING FACILITIES

CLINIC

DETAIL





3. WASTE REMOVAL

Acute and chronic diarrhoea are related to inadequate waste removal. Efficient removal of waste from living areas is likely to reduce prevalence of:

- (i) acute and chronic diarrhoeal disease amongst children and adults
- (ii) skin infection
- (iii) hepatitis
- (iv) polio

3 WASTE REMOVAL

DESIGN IDEAS

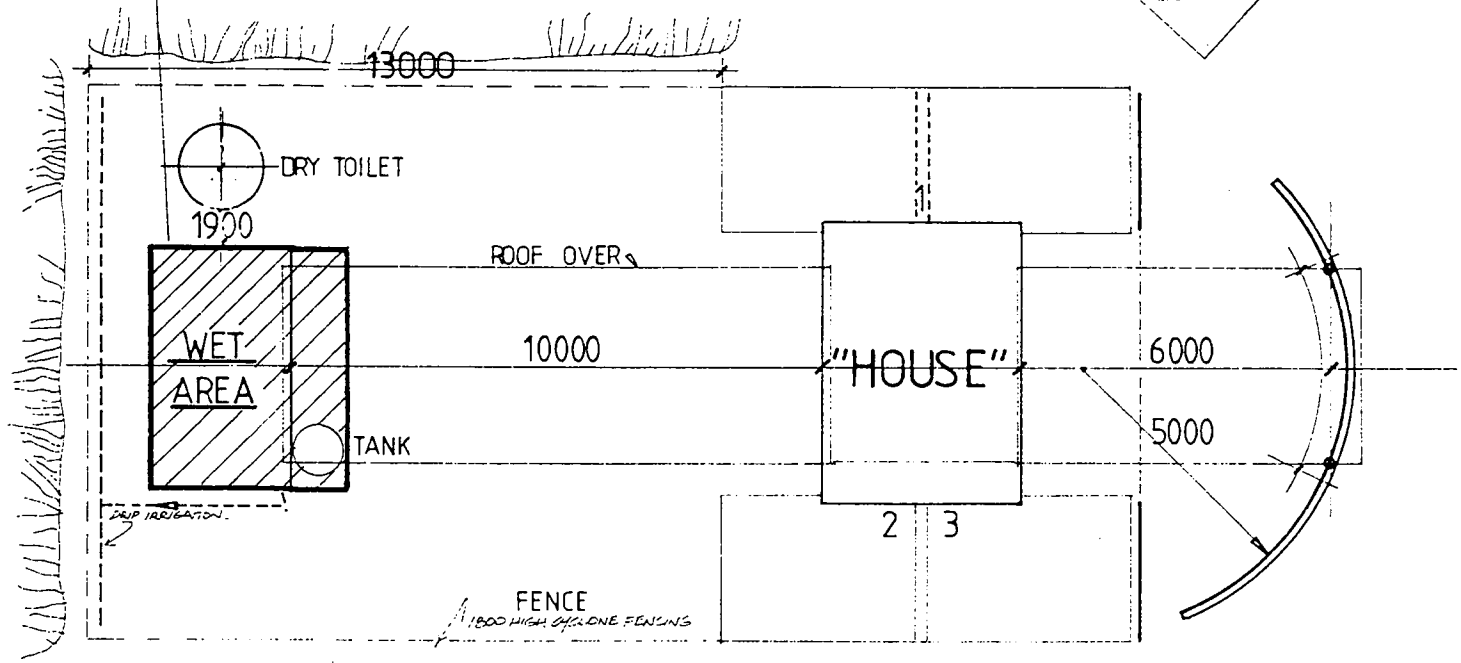
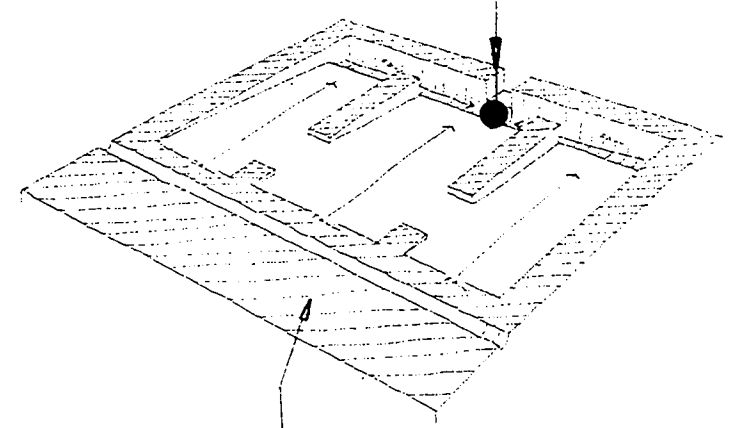
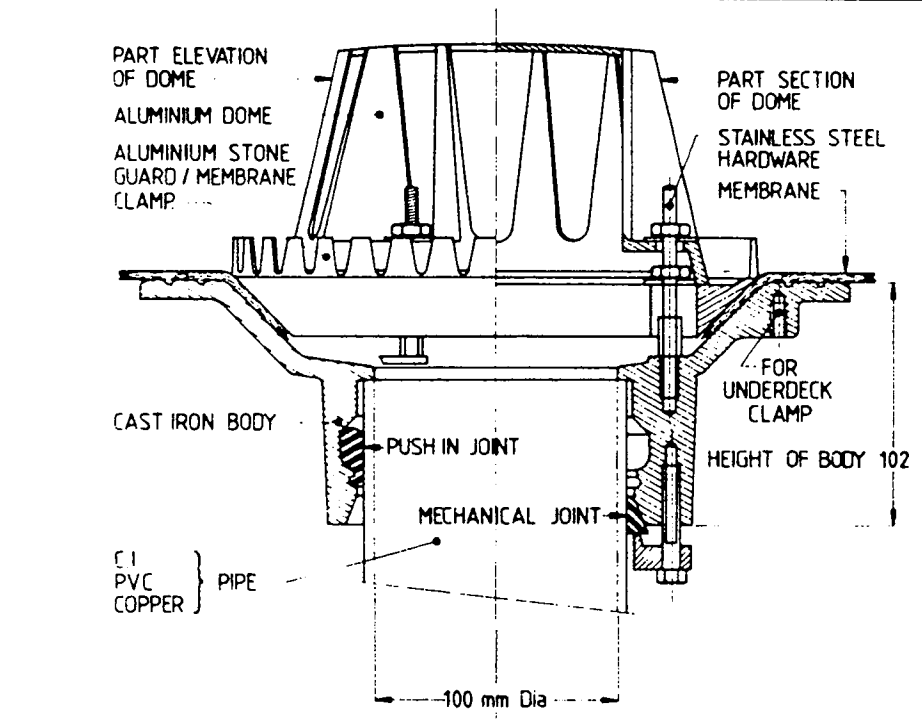
Remove waste efficiently

- i) Minimum in-slab drainage
- ii) Minimum 100mm diameter in-slab drains.
- iii) Well-graded wet areas (minimum 1 in 30 or 100mm fall in 3 metres or 4" fall in 10 feet) preferably in one simple direction.
- iv) Drains to have well secured strainers preferably beehive type to avoid covering with nappies etc.
- v) Constant ventilation of wet area.
- vi) Dry system toilet as auxiliary to flush toilet if installed.
- vii) Flush toilets to be used only in areas of assured water supply.

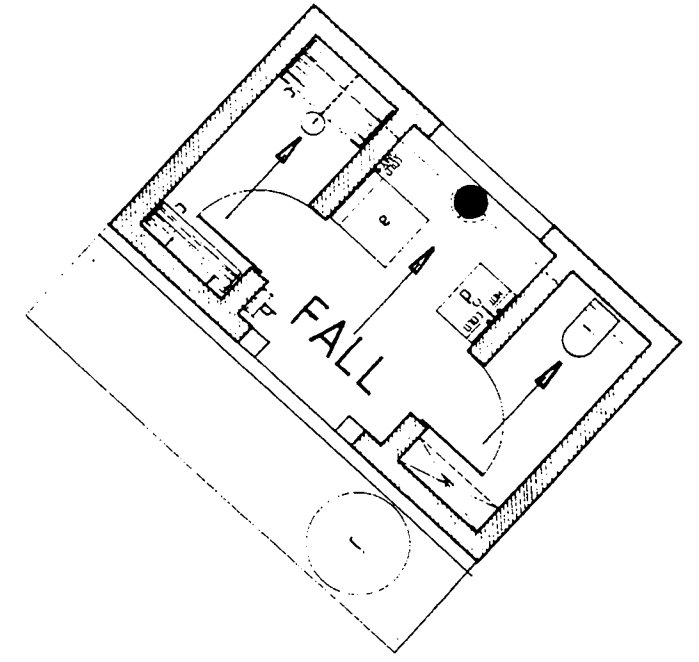
Not Assured	1 Bore - 1 tank and single supply main	DRY TOILET ONLY
	2 Bores- 2 tanks single trenched supply main.	POSSIBLE FLUSH TOILET DRY TOILET ESSENTIAL
Reasonably assured	2+ bores - 2 + tanks loop supply main and isolating valves.	FLUSH TOILET DRY TOILET OPTION IF FLUSH FACILITIES NOT MAINTAINED

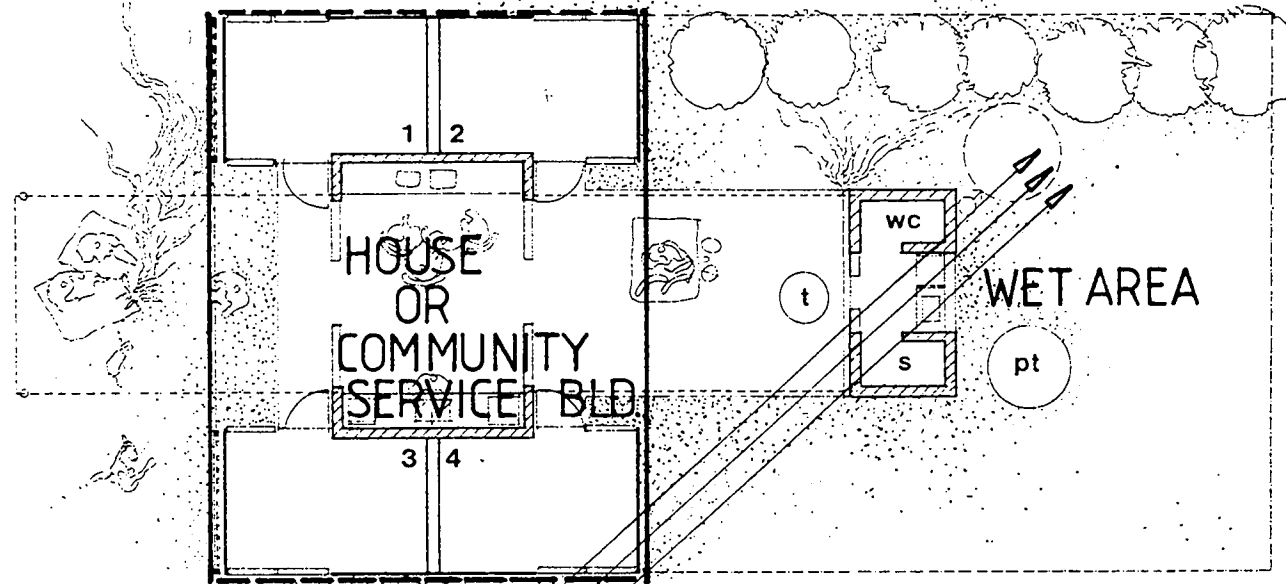
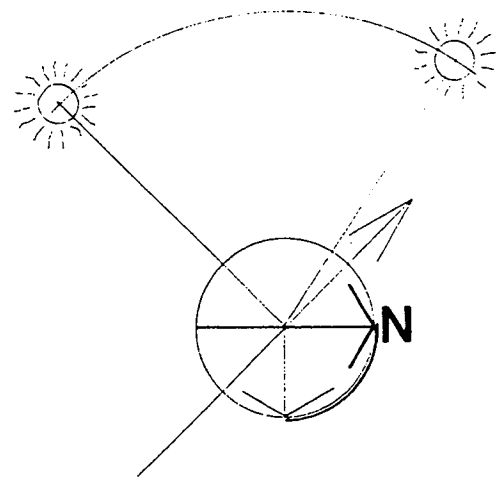
- viii) Failsafe gravel absorption sumps around wet area to avoid ground ponding of foul water.
- ix) Ideally wet area downwind of other living areas of house.
- x) MOST IMPORTANTLY - WET AREA SEPARATE FROM OTHER AREAS OF HOUSE TO AVOID CONTAMINATION IN THE EVENT OF TOTAL FAILURE. IT SHOULD HOWEVER BE CLEARLY PART OF THE HOUSE AND NOT A "PUBLIC" FACILITY.

DETAILS / DESIGNS



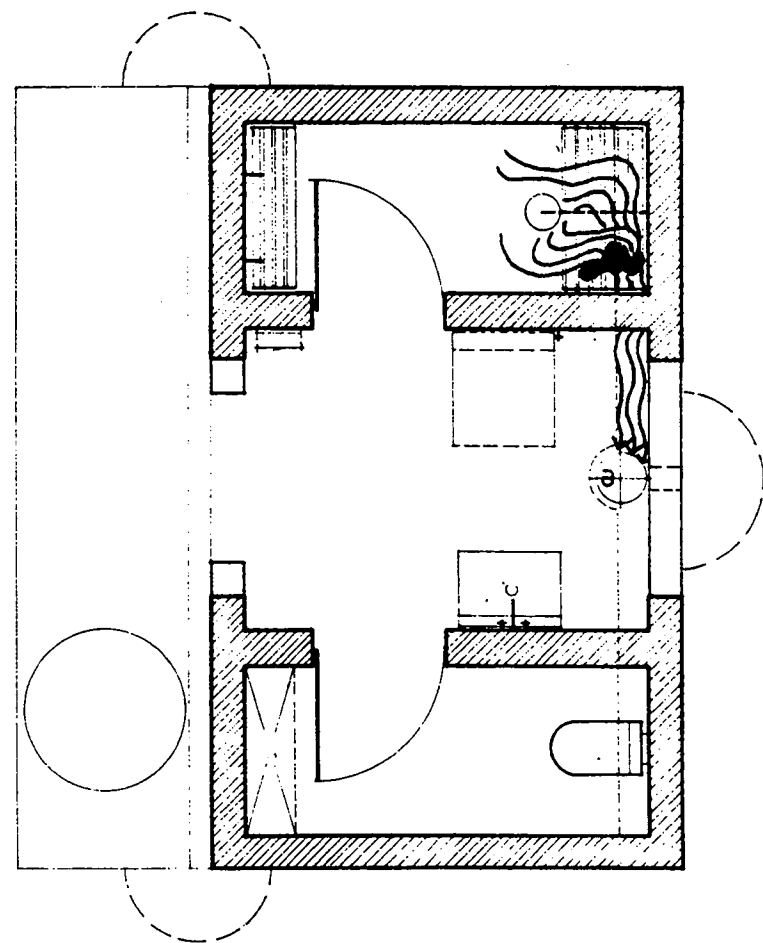
Only 45% of all waste installations are functioning. Foul water infiltration to other rooms of the house is occurring. Ventilation is poor. (only 72% of all windows are able to ventilate).



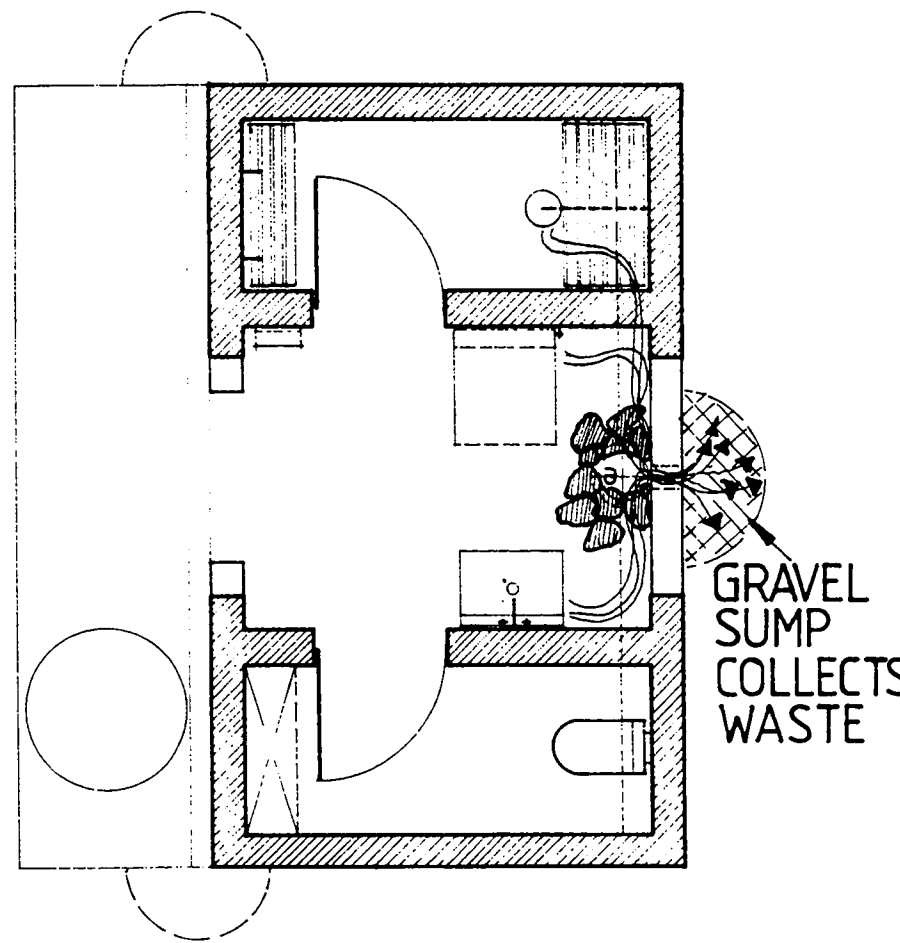


- Personal Health Hardware**
- Cleaning agents (detergents, disinfectants)
 - Brushes
 - Mops
 - Toilet Paper (kept dry)

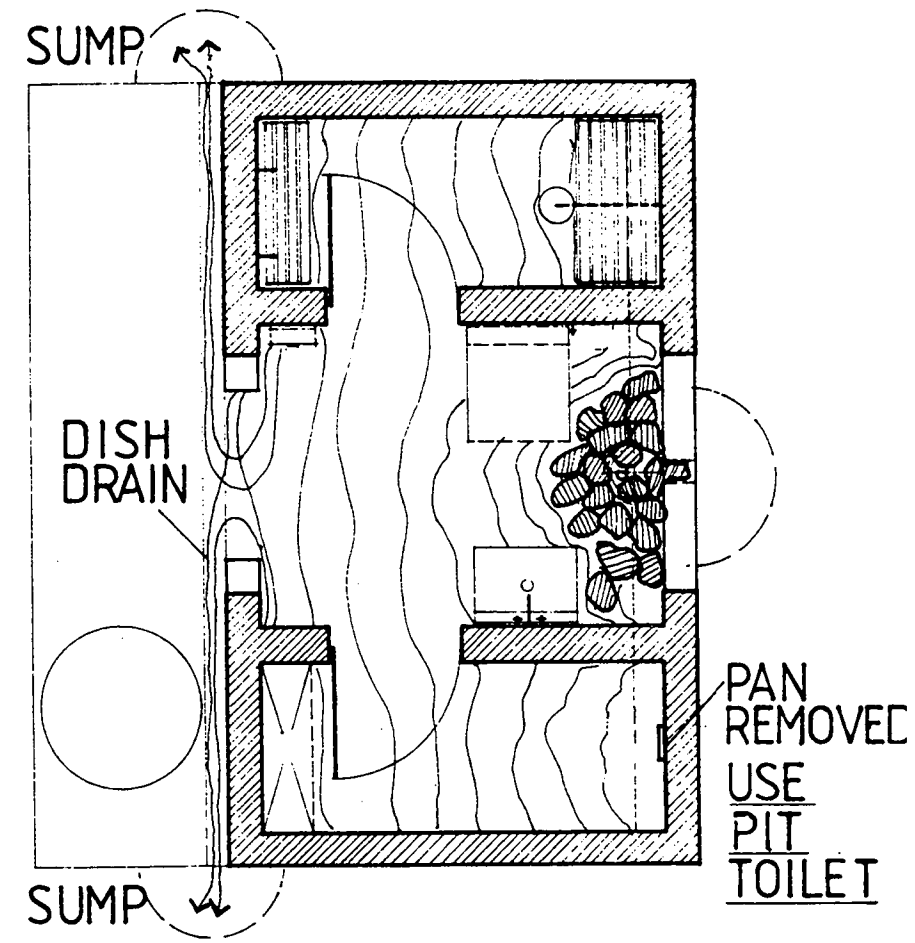
PREVAILING WIND



NAPPIES LEFT IN SHOWER

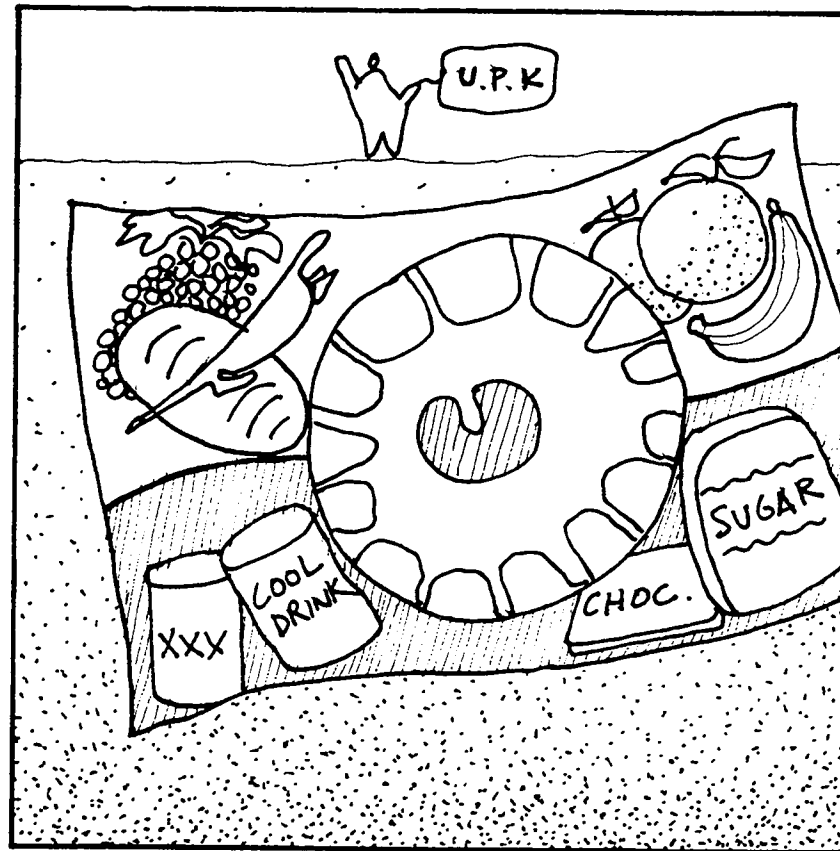


10 NAPPIES BLOCK MAIN DRAIN
FLUSH TOILET BLOCKED



20 NAPPIES BLOCK MAIN DRAIN & SAFETY SUMP
TOILET BLOCKED

DRAINAGE FAILURES AND DESIGN FAILSAFES



4. NUTRITION

The two areas of priority for nutrition action are:-

- (a) Weaning foods and feeding practices in the first three years of life.

Essentially this involves early introduction of solid food and increased caloric intake.

- (b) Strategies to reduce the prevalence of diabetes, hyperlipidaemia and cardiovascular disease. This will involve major changes in dietary practice by Anangu. The major aims are to:-

- (i) increase energy expenditure
- (ii) reduce fat intake
- (iii) reduce sugar intake
- (iv) reduce total calorie intake
- (v) increase fibre intake

The strategies may include:-

- (a) health education programmes
- (b) changes in store policy and practice.

Production of food grown from the living area is another long term strategy to improve dietary practice.

Whilst we recognize the importance of nutrition to health, it is also true that the 'hardware' outlined in this section is only a part of any overall nutrition strategy. The initiatives above are not likely to have a major impact on health status, if unsupported by other initiatives.

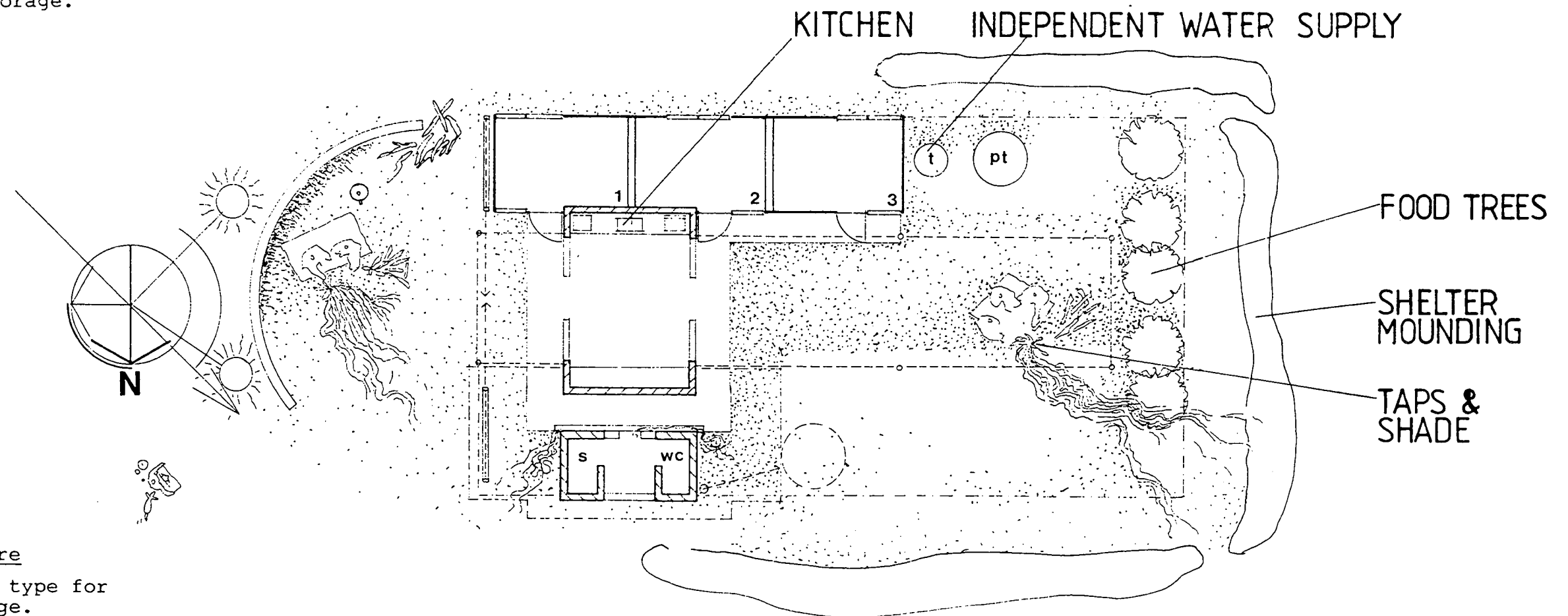
DESIGN HARDWARE

SURVEY FINDING

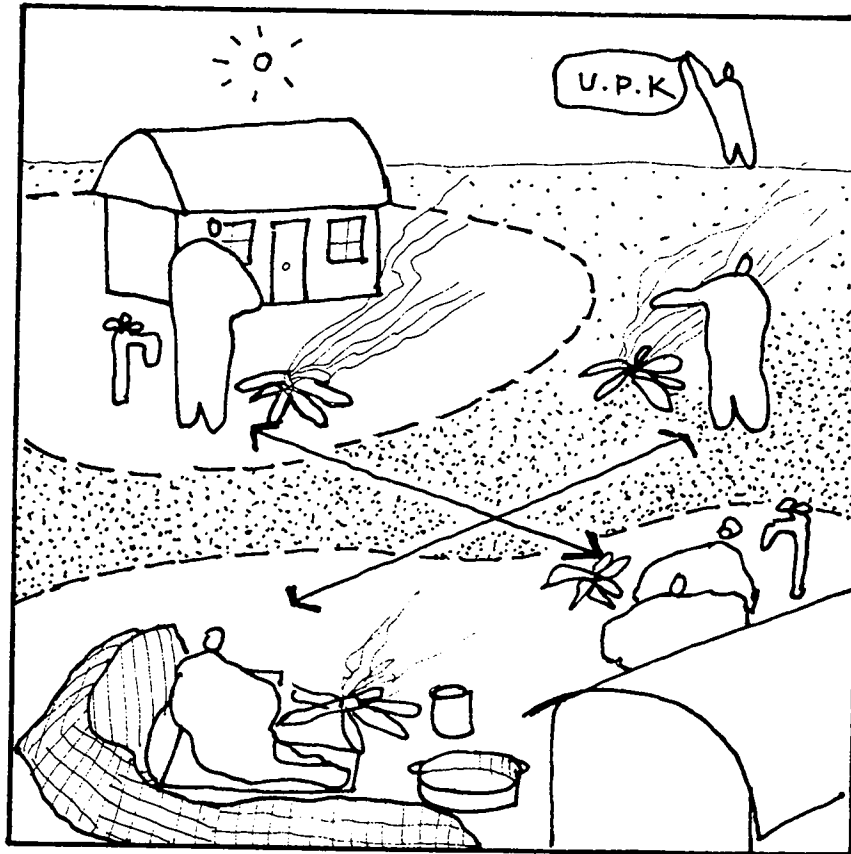
NutritionNutrition - food storage facilities

- i) House yard to be primary source of food
 - watermelon
 - fruit trees
 - beans etc.
- ii) Provide food washing and cooking facilities.
- iii) Encourage yard cooking areas with wind protection, dust control and security.
- iv) High shelves, out of dogs' reach, for food storage.

No evidence of productive food plants within Community housing yard areas was found.

Personal Health Hardware

- Eskys - hinged lid type for food storage.
- Cooking utensils - particularly for fire areas.
- Alfoil for cooking.
- Water containers for yard cooking.
- Access to firewood.
- BBQ plates/grids for cooking.
- Drum ovens.



5. REDUCE CROWDING

Reduction in crowding is likely to reduce any disease which is spread by infected, body surface secretions. In particular, crowding has been shown elsewhere in the world to be a major determinant of the prevalence of respiratory infection/pneumonia - in children and adults.

5 REDUCE CROWDING

DESIGN IDEAS

Reduce crowding

All survey information to date would indicate crowding is not a product of "house" size but rather family links. i.e. Big houses are neither more nor less populated per square metre. Equipping the yard as usable house space is probably the best way to reduce the ill effects of crowding.

- i) With dust control; better ventilation.
- ii) Fire as heating source spreads camp layout.
- iii) Edge of house. Sheltered space which gives rain protection but still allows use of outdoor yard areas.

Whilst fires and external taps can provide an outdoor cooking alternative to kitchen stoves and sinks, the washing and toilet facilities of the house are not duplicated and have rarely been designed to cope with a constant average population of more than eight people. (i.e. one "bathroom" with combined laundry, toilet and washing facilities, fittings, finishes).

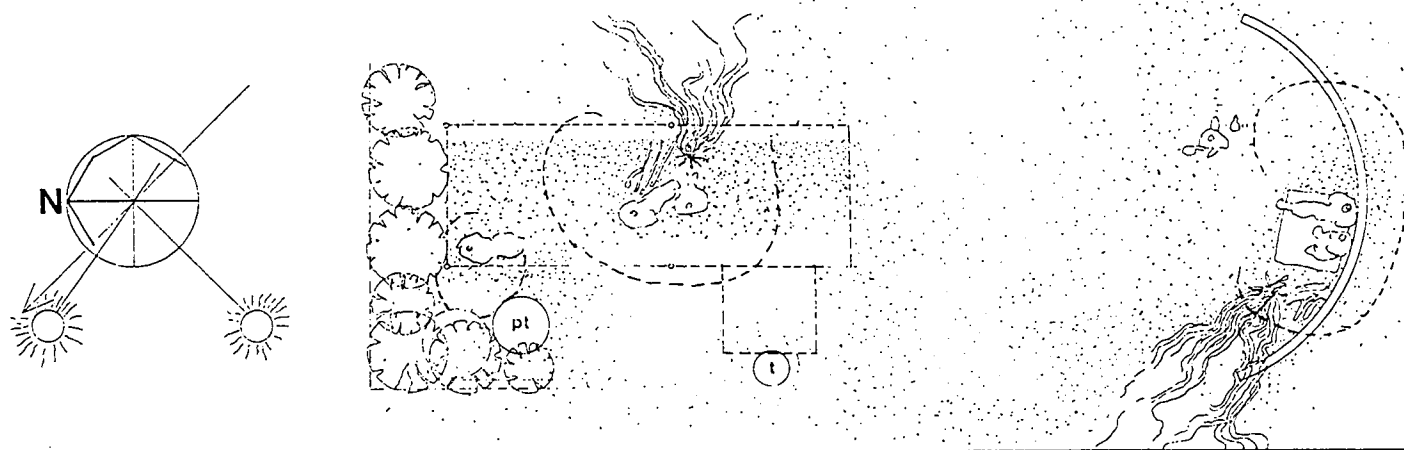
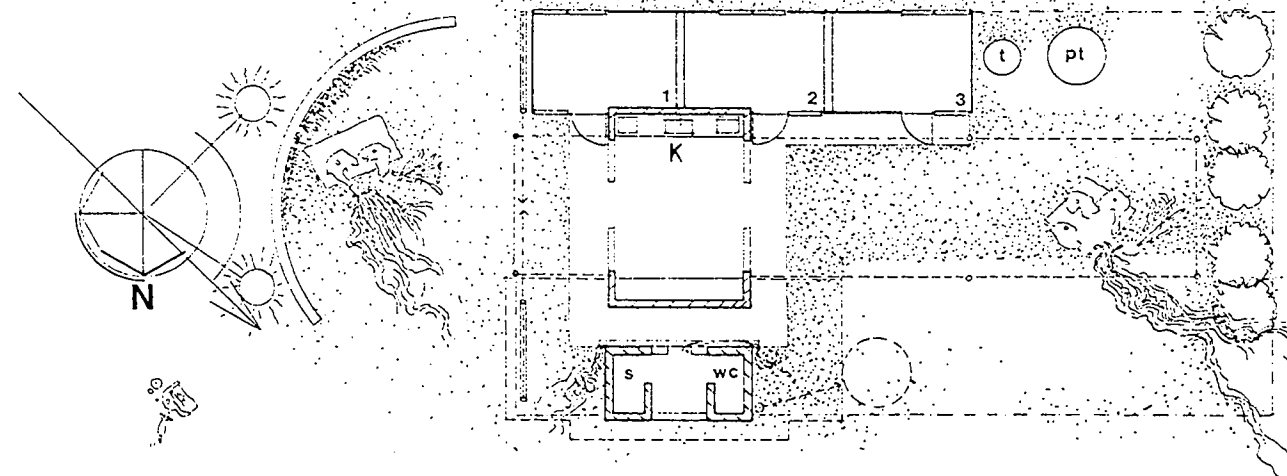
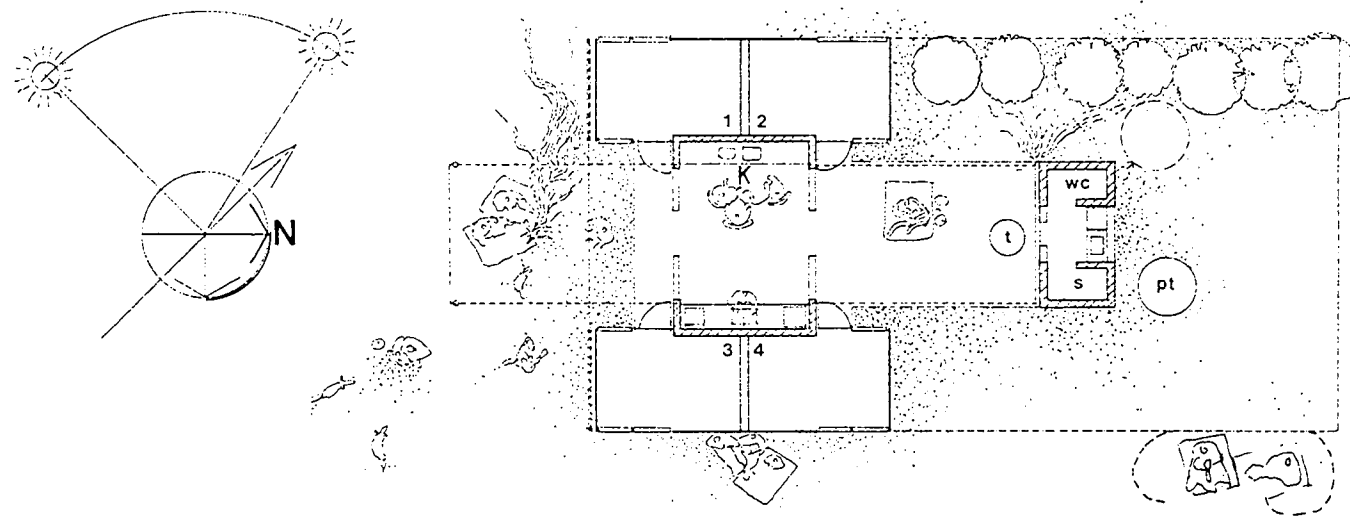
"Crowding" of these essential washing facilities can be reduced

- * Separate toilet/shower/washing clothes/tub for child washing
- * Provide two toilets
1 dry system toilet provides a failsafe in the event of temporary water failure

The following personal health hardware would be essential for people without access to "housing" as well as for those utilizing yard areas to expand the house.

- Sheet iron
 - Weldmesh and Tarps
 - Iron droppers
 - Firewood
- } for shelter

POSSIBLE LAYOUTS



Figures of area per person vary widely in each community from:

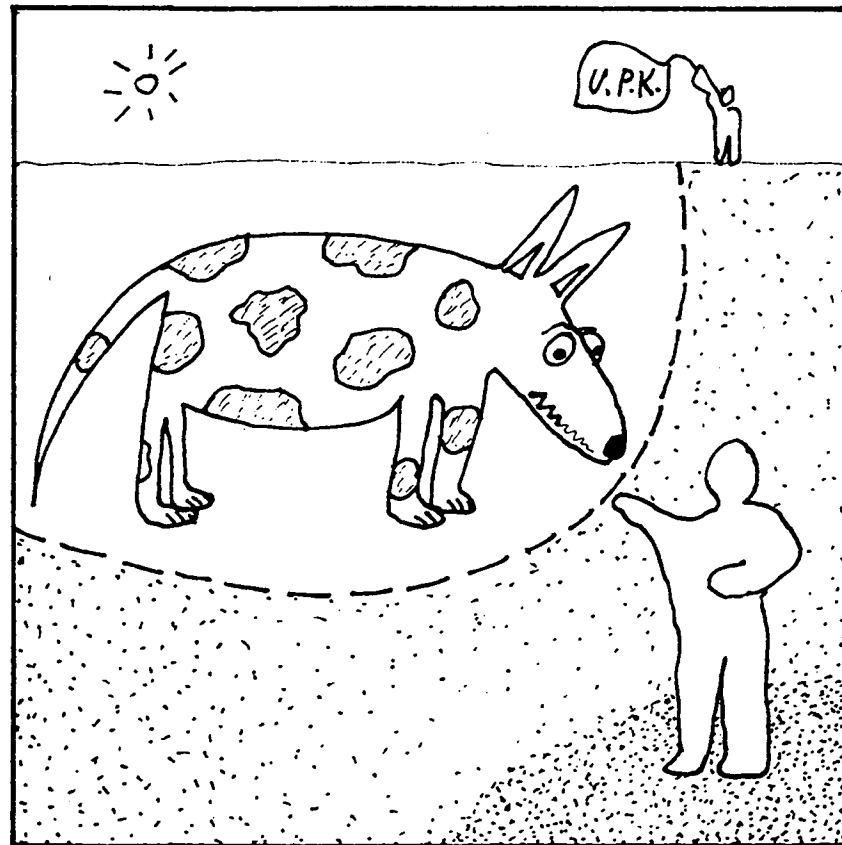
21.5 sq.m/person to
4.8 sq.m/person

These would correspond to a "normal" Sydney/Adelaide suburban house (approx. 135 sq.m) permanently housing five people or 37 people respectively. With the average of 10.2 sq.m/person the corresponding suburban equivalent would contain 13 people.

This gives some idea of the stress placed on the facilities of the house, particularly water and waste services.

There is strong evidence to support the fact that houses are not used in this suburban way, and the realities of space available outlined above would make it impossible. Yard areas are essential for people to reduce crowding, and evidence shows clearly people use these areas. 82% of all houses have at least one recently-used fire and camp area within the surrounding yard.

pt (pit) dry system toilet † water tank
W.C. possible flush toilet k kitchen
S shower (laundry) 1,2,3,4, enclosed area



6. SEPARATION OF DOGS AND CHILDREN

Dogs carry and transmit a large number of bacteria and parasites as well as scabies. Reducing contact between dogs and children should reduce:

- (i) Skin infection and scabies
- (ii) Diarrhoeal disease (in particular Giardia, a common cause of chronic diarrhoea in young children, has been shown to be carried by dogs).
- (iii) chronic gut parasite infection of children and adults

IDEA

EXAMPLE

RESEARCH

Some screening of dogs particularly from children.

Yard - reduce water ponding
- restrict access BUT HOW?

Restrict dog access to food by providing high shelves particularly on external edges of buildings.

Implement a dog health program

Problem: Dogs defecating near taps where kids play can cause health problems.

- Observed:
1. Taps at standpoints are often left on.
 2. Most standpoints have a square of concrete beneath but no drainage, thus water runs off and pools, so dogs can drink - hence the attraction.
 3. Standpoints in the middle of camp are often damaged by kids or cars etc., because the pipes have little protection.

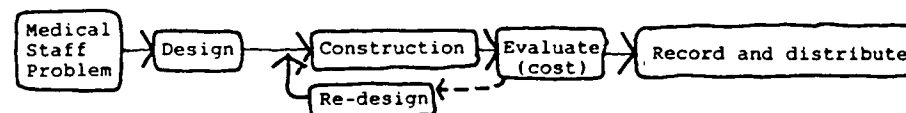
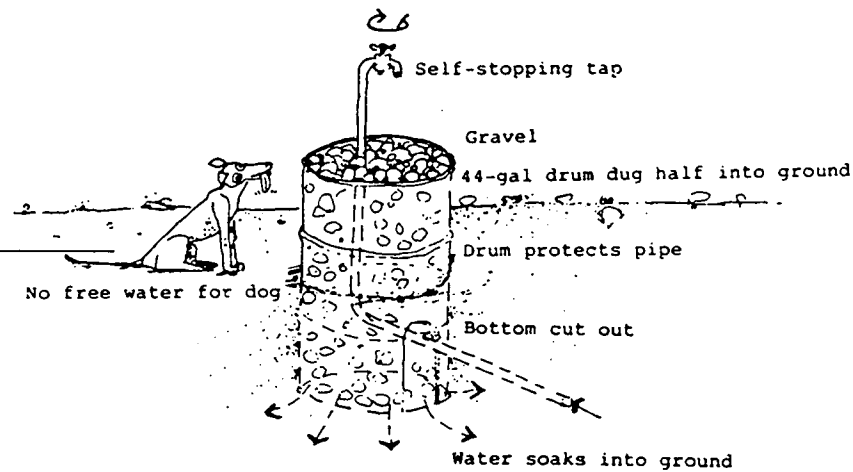
There is some evidence in yards where taps leak and water ponds (24% of all external taps either don't work or are faulty) that dogs are attracted to the water ponding.



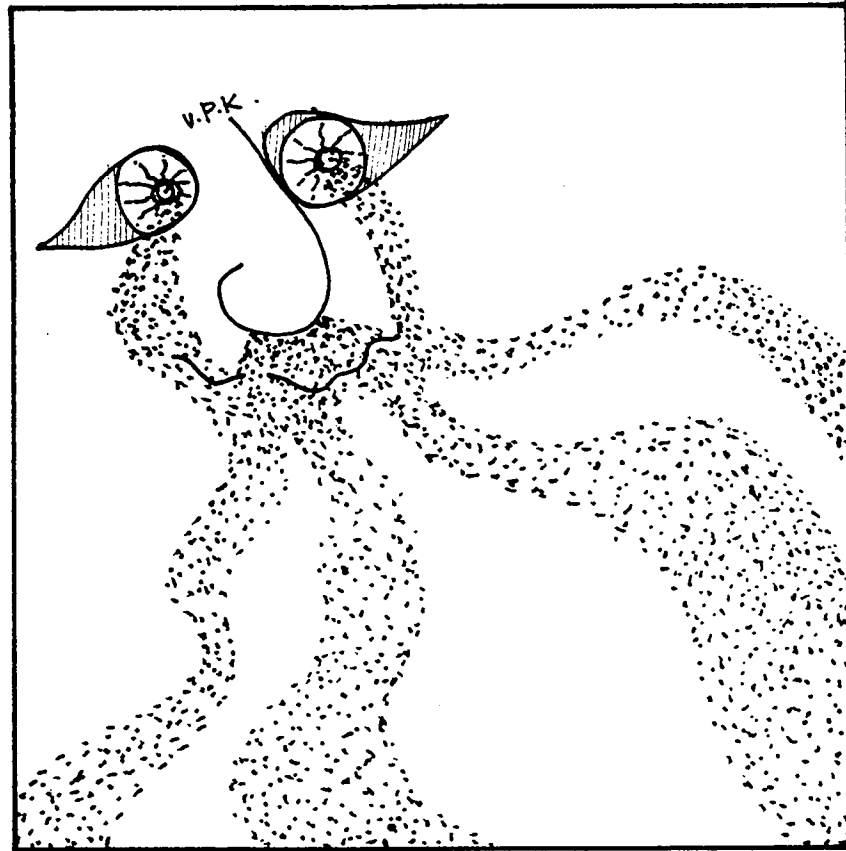
Design idea for testing:
A self stopping tap and a 44 gal. drum dug into the ground and placed over the standpoint filled with gravel.

THIS DOES NOT WORK

THIS HAS



Pika Wiya Health Service's dog health program (Vorst 1987)



7. DUST CONTROL

The high level of environmental dust contributes to:-

- (i) Respiratory disease by causing non-specific irritation and inflammation of the respiratory tract
- (ii) Eye disease by causing abrasion and inflammation of the conjunctiva and making it more prone to infection
- (iii) Skin infection

All these conditions are likely to be reduced by improved dust control.

7 DUST CONTROL

DESIGN IDEAS

LAYOUTS / DETAILS

SURVEY RESEARCH

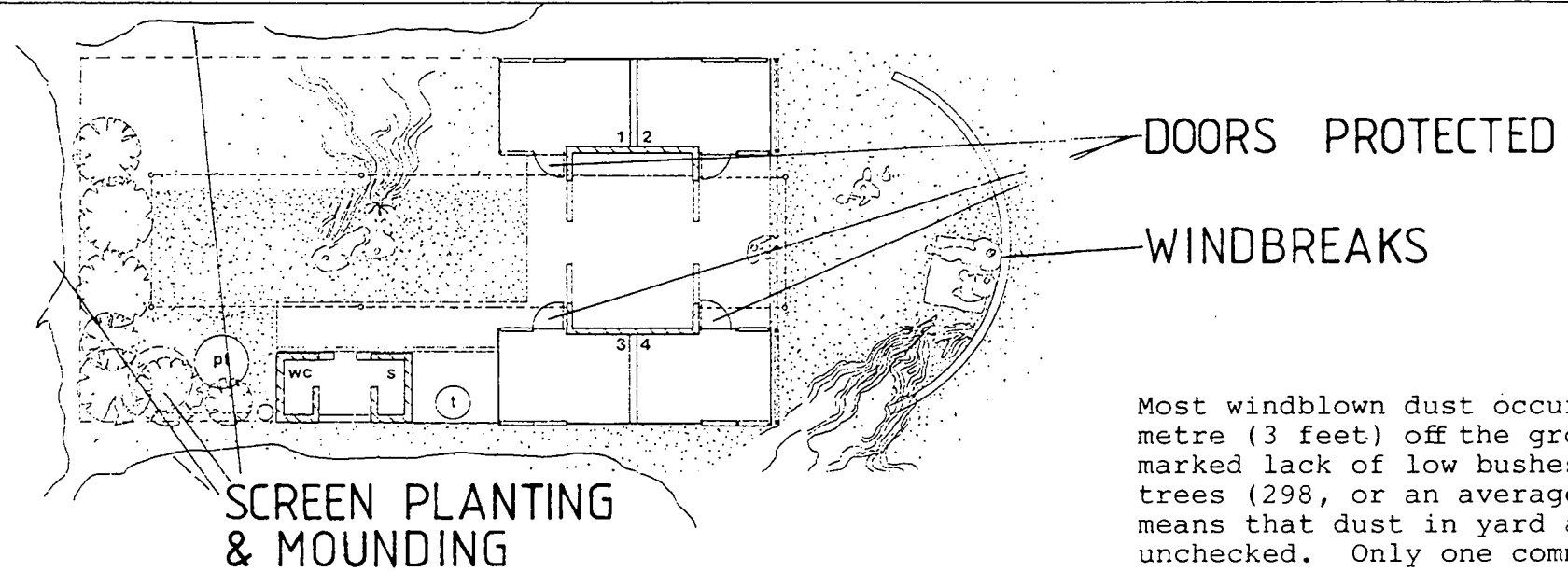
Control of dust

For camps and "house" yards - Planting.

- i) Perimeter planting to reduce dust - combine with yard fencing.

House

- i) No doors, low level windows or openings without some protection. Most dust travels in the first metre above ground.
- ii) Places to shed dust on entry to "house" verandahs, decks etc. This may reduce dust on blankets and bedding used in the house.

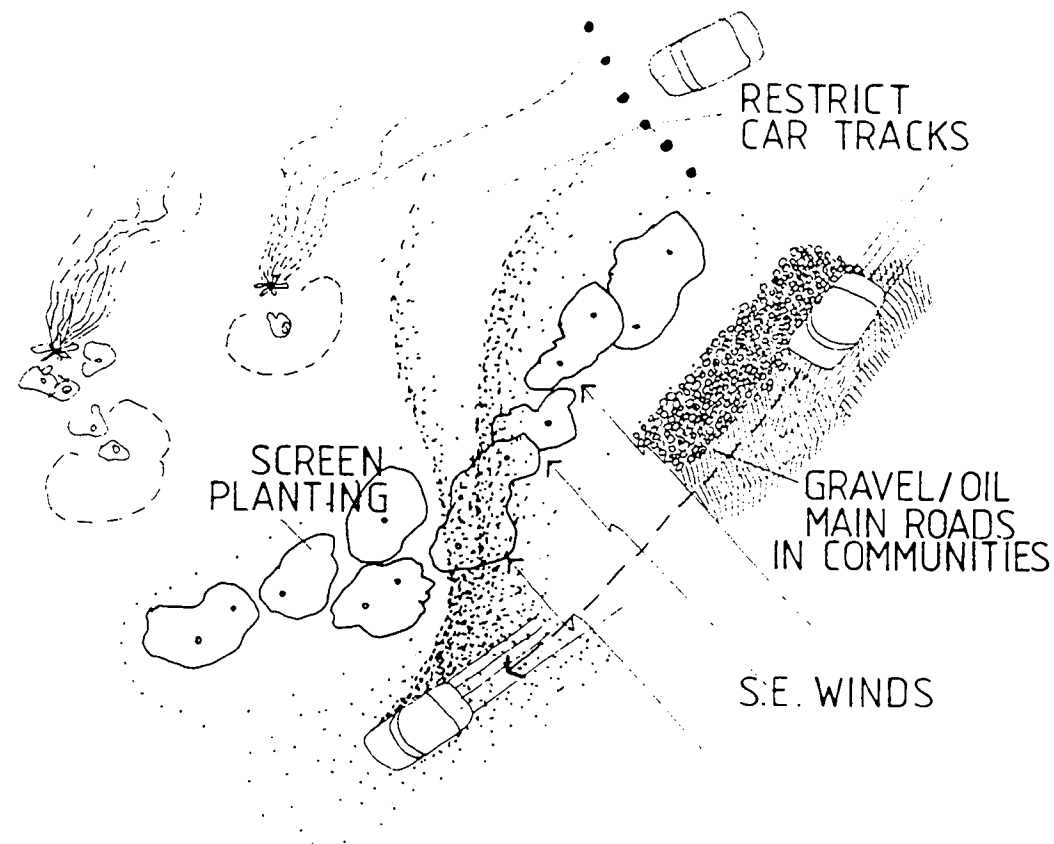


DOORS PROTECTED

WINDBREAKS

SCREEN PLANTING & MOUNDING

Most windblown dust occurs within a metre (3 feet) off the ground. The marked lack of low bushes or immature trees (298, or an average of 3/house) means that dust in yard areas goes unchecked. Only one community surveyed (Amata - 93 immature trees) shows any signs of recent attempts at planting. Only one community (Ernabella 217 mature trees) shows any sign of inheriting substantial planting around housing areas which can provide useful shade. (Note that Ernabella has 58% of all mature trees surveyed)

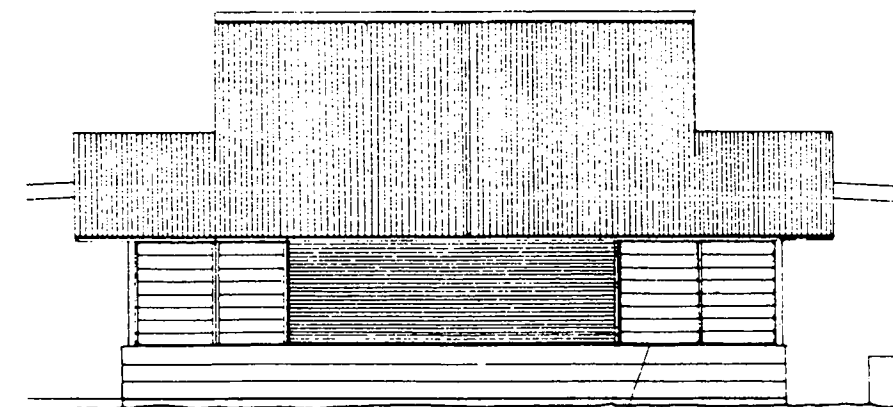


RESTRICT CAR TRACKS

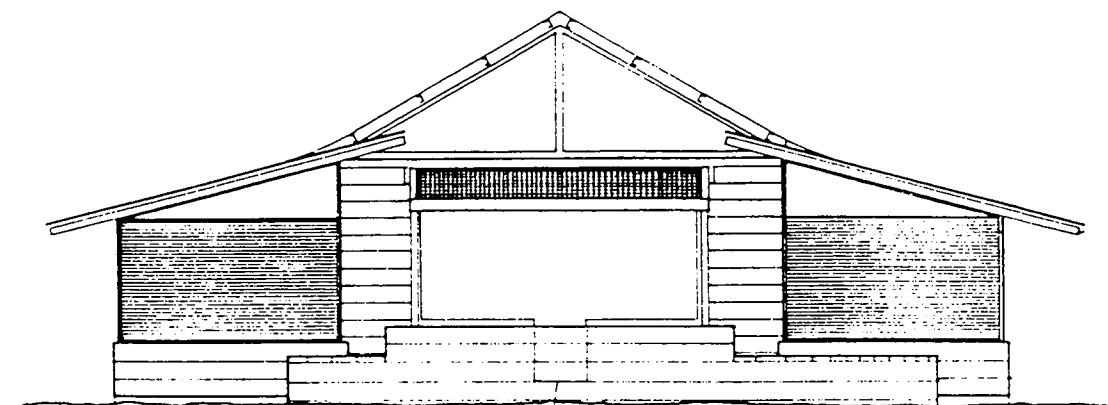
SCREEN PLANTING

GRAVEL/OIL MAIN ROADS IN COMMUNITIES

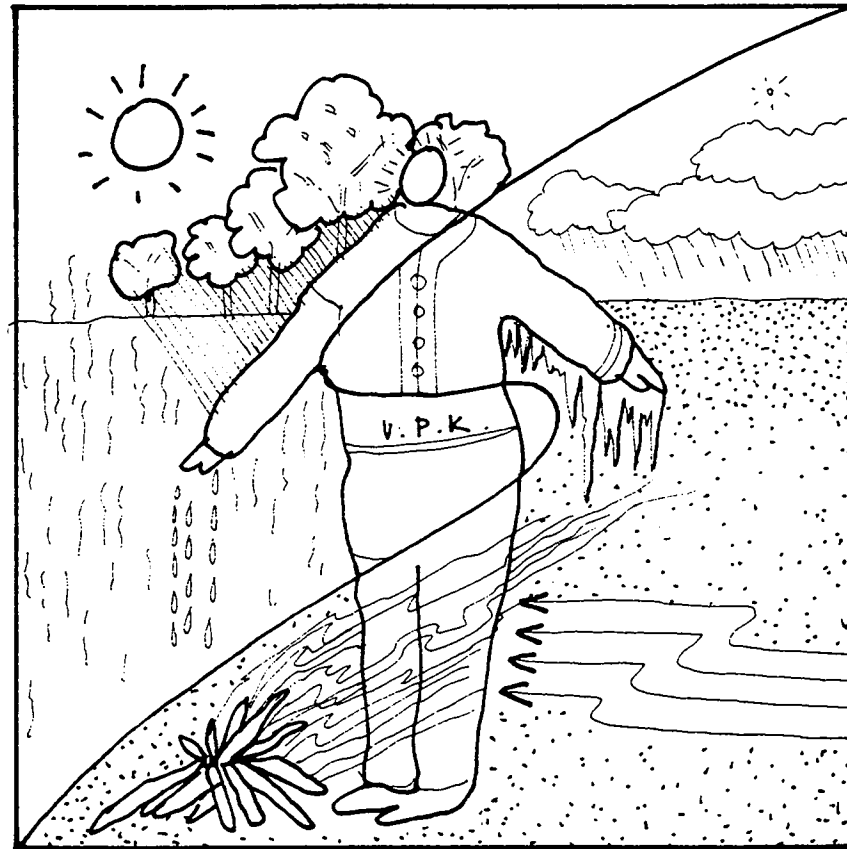
S.E. WINDS



NO OPENING BELOW (3') 1 METRE



WINDBREAKS PROTECT ENTRY



8. TEMPERATURE CONTROL

The major health benefit of temperature control within the living area is likely to be during winter with a reduction in crowding of sleeping facilities and of the encouragement of mothers to wash young children.

Cool areas during summer are important to reduce dehydration in sick children.

During winter much of the Anangu time is spent ensuring that the family will be warm at night. Any 'new' living style will have to incorporate this concern to be protected against the desert cold.

DESIGN IDEAS

DETAILS/LAYOUTS

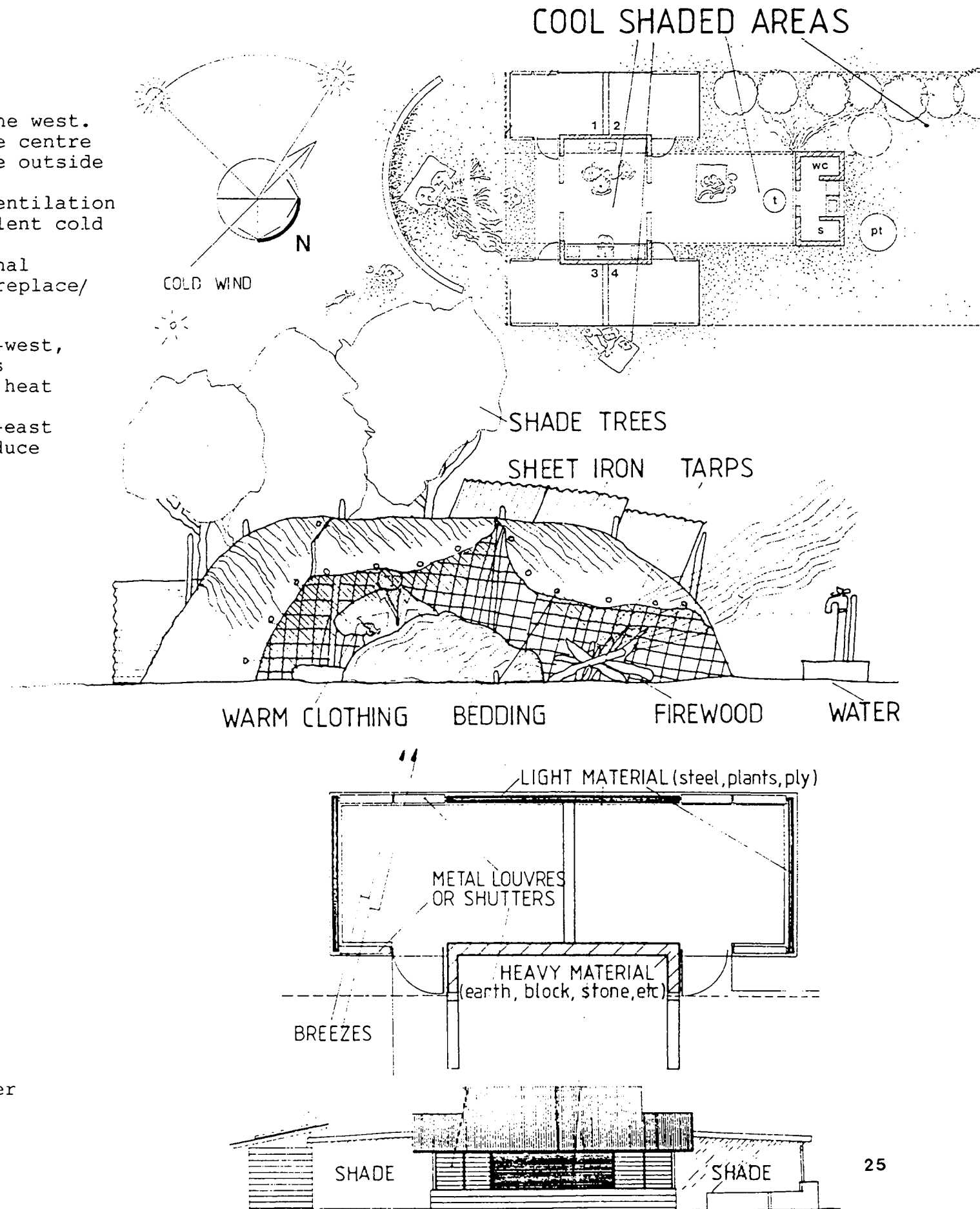
SURVEY RESEARCH

Provide some temperature control

- i) Good orientation
- ii) Eaves or shading to the west.
- iii) Solid materials to the centre
Light materials to the outside
(store heat or cool)
- iv) Adequate "failsafe" ventilation
- v) Protection from prevalent cold winter wind (SE)
- vi) Potential for additional heating (pot belly/fireplace/electric heater?)
- vii) Planting to the north-west, west and south-west is effective in reducing heat loads.
- viii) Planting to the south-east and south can also reduce wind chill in winter.

Personal Health Hardware

- Weldmesh
- Sheet iron
- Iron droppers
- Tarps
- Firewood
- Warm clothes for winter
- Blankets and bedding.



Only 55% of all houses have an orientation which could in any way be called beneficial. As there is no cost penalty for orientating a building properly, this is a case of poor design or supervision.

A third (31%) of all houses have no verandah of any sorts.

Of all houses only 32% have verandahs that could assist in cooling the house in summer.

A third of all houses have verandahs directly orientated towards the prevailing cold winter winds. Few have any windbreak provisions although some have been "owner modified".

Poor ventilation brought about by repairing broken glass windows using sheets of Lexan screwed to frames (47% obviously replaced) makes many interiors uninhabitable in summer (only 72% of windows are able to ventilate).

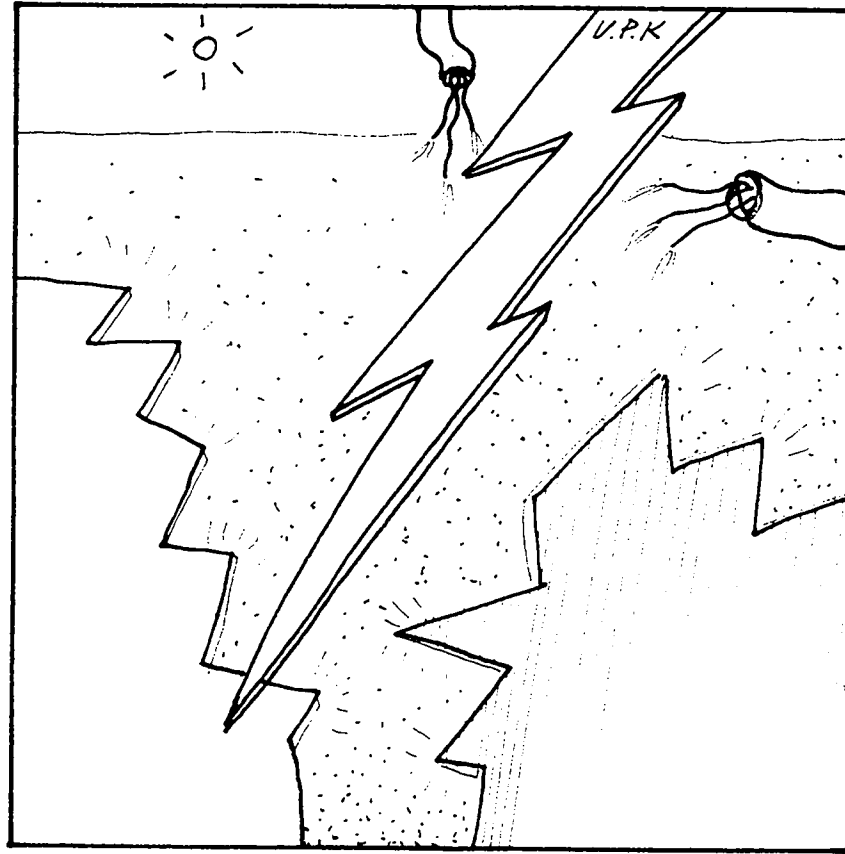
Metal louvres (Indulkana) and metal shutters (Amata Kalka/Pipalyatjara, Mimili) seem to provide best ventilation

Indulkana	78%
Amata	95%
Kalka/Pipalyatjara	98%
Mimili	79%

where "traditional" glass windows are used; broken and replaced the ability to ventilate decreases.

Aparawatatja	53%
Pukatja	55%

Relatively high numbers of mature trees (374) compared to immature trees (298) would suggest either a decrease in planting or not enough protection for immature plants in recent years.



9. REDUCE TRAUMA

Aboriginal children and adolescents are at risk from the dangers of 'accident' within the community. Trauma is common and often leads to clinic presentation and less commonly to hospitalization or permanent disability.

9 REDUCE TRAUMA

DESIGN IDEAS

HEALTH HARDWARE SUMMARY

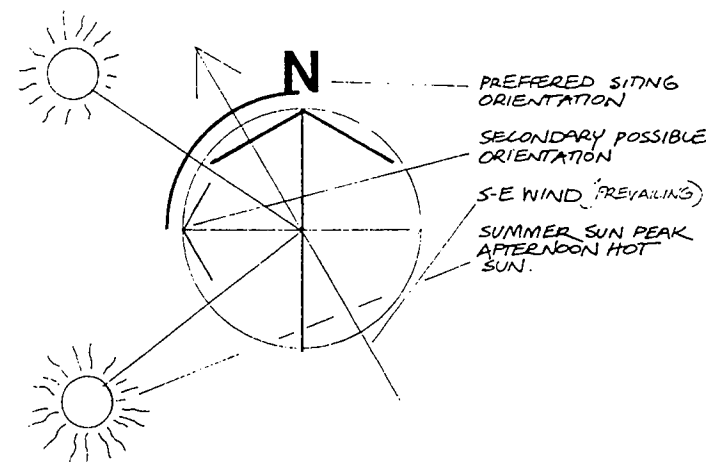
SURVEY RESEARCH

Reduce trauma

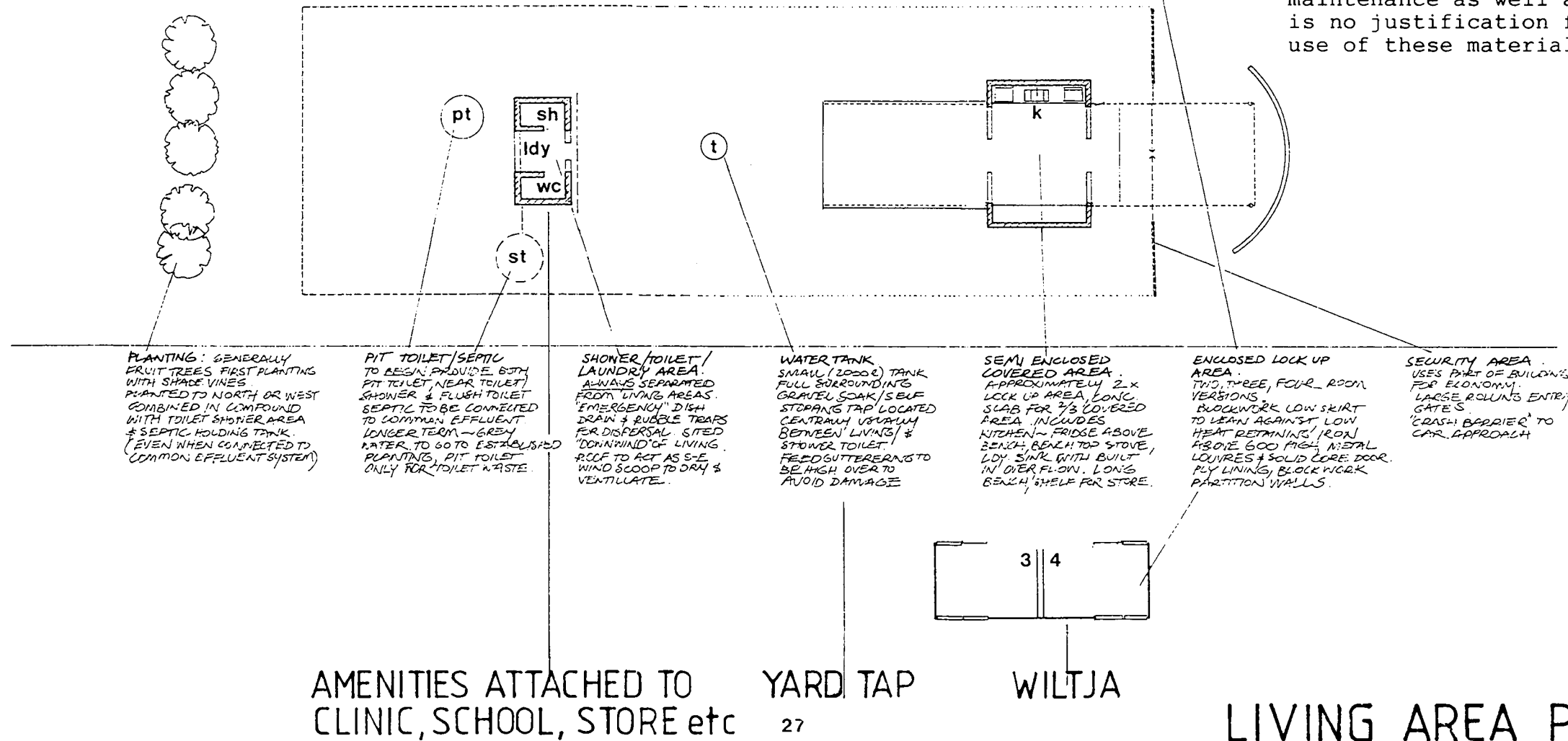
- Reduce trauma - physical injury
- i) All electrical installations have water-and dustproof fittings.
 - ii) Adequate earth leakage protection and protection of earth stakes.
 - iii) No glass to be used in any construction work.
 - iv) Limit the use of "thin" (less than 12mm) fibrous cement sheet ("fibro", "hardiplank", "hardiflex", etc.) which breaks easily and has sharp edges.

Personal Health Hardware

Rakes and shovels



The waste of money and effort on replacement of glass windows is extraordinary. Of 708 windows at least 337 have been "obviously" replaced or repaired. Many have been replaced two or three times. At the time of survey, houses were still being built with glass windows. Fibrous cement sheet walling is similarly wasteful. Of all walling materials 47% is fibrous cement; of all these buildings 69% are damaged. Whereas, of the 53% of walls not using cement sheet only 13% have any damage. For construction, transport and maintenance as well as health, there is no justification for the continued use of these materials.



It is now recognised that the most effective and appropriate means of providing and managing essential resources and services is through a process which enhances community involvement and self-management. This ensures a greater degree of identification and participation by the client group which is to receive or be affected by a service, and the maximisation of resource co-ordination and utilisation. Conversely, when the administration or management of any social function becomes too removed from the client group, or spreads too far from a 'common area', then there can be a tendency for remote management and consequent poor decision-making. Any service or management system should strive for the appropriate balance between client participation and cost efficiency.

The concept of community management does not preclude the co-operative administration of resources and service across a regional community area. The 'regionalism' of goods and services within an under-developed and under-capitalised area is often the only realistic means through which people will receive any resources. The collective use of scarce resources can also lead to more cost efficient and effective service delivery, while providing for the development of improved standards of public health.

The definition of community is not limited to a single geographical location. Community can also be defined as "a group of people with something in common". Anangu living on the AP Lands and the neighbouring parts of Western Australia and the Northern Territory are a cohesive community, bound by one common law and culture. The management of essential community services should make use of this Anangu social organisation, by empowering it with responsibility and resources, rather than imposing management structures which are foreign to Anangu and therefore demand further social adaptation and change.

Anangu have managed to remain on their Lands and their culture continues to thrive despite the fact that their society has undergone major social and economic changes during the 20th century. In 1976 the Pitjantjatjara, Yankunyatjara and Ngaanyatjara people formed the Pitjantjatjara Council Inc to represent their collective interests and to act as a national body. This organisation operates across state borders and has developed land management systems and administers the provision of some human and essential services. In 1981 the South Australian government proclaimed the Pitjantjatjara Land Rights Act, which empowered Anangu Pitjantjatjara with the control and management of the Pitjantjatjara freehold lands in SA. The AP Lands comprise 10,190,000 hectares of semi-arid land, in far north west corner of SA, amounting to about 10% of the state's land mass.

The AP legislation provides membership in AP to the Pitjantjatjara, Yankunyatjara and Ngaanyatjara people as well as access and responsibility for the management of the Lands. This responsibility is formally exercised through an executive board of 11 persons, which is elected annually.

In the early 1970s Australian governments proclaimed the principles of Aboriginal self-determination and self-management. Aboriginal councils and incorporated organisations were established and financially supported, so that today there are some 1400 Aboriginal organisations throughout Australia. The creation of Aboriginal organisations has often displaced government programmes, as noted in the SA Human Services Review (South Australia 1987a). In South Australia, the State Government effectively withdrew from the role of Aboriginal community administration in 1978, allowing the Commonwealth Department of Aboriginal Affairs to assume the role of funding and liaison. The transfer of service administration on the AP

Lands from government to community has been accomplished in an ad hoc fashion, without sufficient training of Aboriginal and non-Aboriginal staff preparatory to the transfer. The Miller Report stated that "... Aboriginal people were faced in many instances with accepting wide management responsibilities for which they have received little or no effective training." (Australia 1985)

The development of a plan of management is essential for the improvement of public health on the Lands.

Historically, the Pitjantjatjara people had their own "plan of management", which served them well for many thousands of years. This system was disrupted with the occupation of their Lands. No plan of management has been developed that answers the changing demands of contemporary life. Anangu, having assumed limited responsibility for the management of goods and services within their Lands and communities, have not evolved a 'modern' plan of management encompassing the goods and services required for a contemporary 1980s lifestyle. In addition, government funding and support have often been erratic and unplanned.

Anangu need to be involved in working out their own contemporary plan of management, but a major impediment to this is that much of the final decision-making is remote. Detached management does not allow for 'real' consultation upon policy issues and may result only in superficial liaison between government agencies and Anangu. This does not empower Anangu and does not allow for the development of Anangu management expertise or the establishment of Anangu priorities.

To further complicate the problems associated with a multiplicity of service agents, there are three major factors which have an impact on the delivery of all essential services on the AP Lands:

Firstly, the AP Lands are an isolated geographical area, where the nearest service centre is Alice Springs, 430 km from the closest AP community. This isolation makes the provision of any service difficult, time consuming and costly.

Secondly, the Pitjantjatjara and Yankunyatjara culture is very different from that of Europeans. Very few non-Pitjantjatjara speak even rudimentary Pitjantjatjara and few Anangu speak fluent English. In this setting, with agencies and individuals coming and going, communication and consultation are almost non-existent. At the Kaltjiti (Fregon) community, the Community Advisor documented 142 meetings he had attended on behalf of the Council in a three-month period in 1986. This is an average of 1.6 meetings per day, and also involves a wide range of vital issues.

Thirdly, the presence of a large resident group of non-Aboriginals in AP Lands created its own demand for housing, essential, health, and other services. Most of the facilities that were subsequently installed were too sophisticated for local non-Aboriginal resident staff to maintain let alone Anangu workers, so that outside labour was required, as a rule, to maintain them.

Planning and competent management are essential if Public Health is to improve on the Lands.

The concept of public health and its relationship to the management of essential goods and services is unclear to most Australians, because in an urban environment services are integrated to such a degree that they are taken for granted. Yet on the AP Lands the lack of public health resources, co-ordination and management is so obvious that it is also taken for granted. In a modern city, proper planning and management is an essential feature of the provision of essential services such as housing, water, electricity and waste disposal. If any

of these services is disrupted, the public health of the population is seriously threatened.

Public health is therefore, highly dependent on the planning, funding, installation, maintenance and utilisation of essential services and community facilities. Proper functioning of these services is dependent on management at three levels:

- local
- regional
- government and external agencies.

Management at the local level is critical for public health. Every facility in the community relevant to public health is dependent on community management for its functioning. Generators, water systems and waste disposal all need to be paid for, installed and maintained. Once these services break down they become a threat to public health. There were many instances where these services failed, because of poor management.

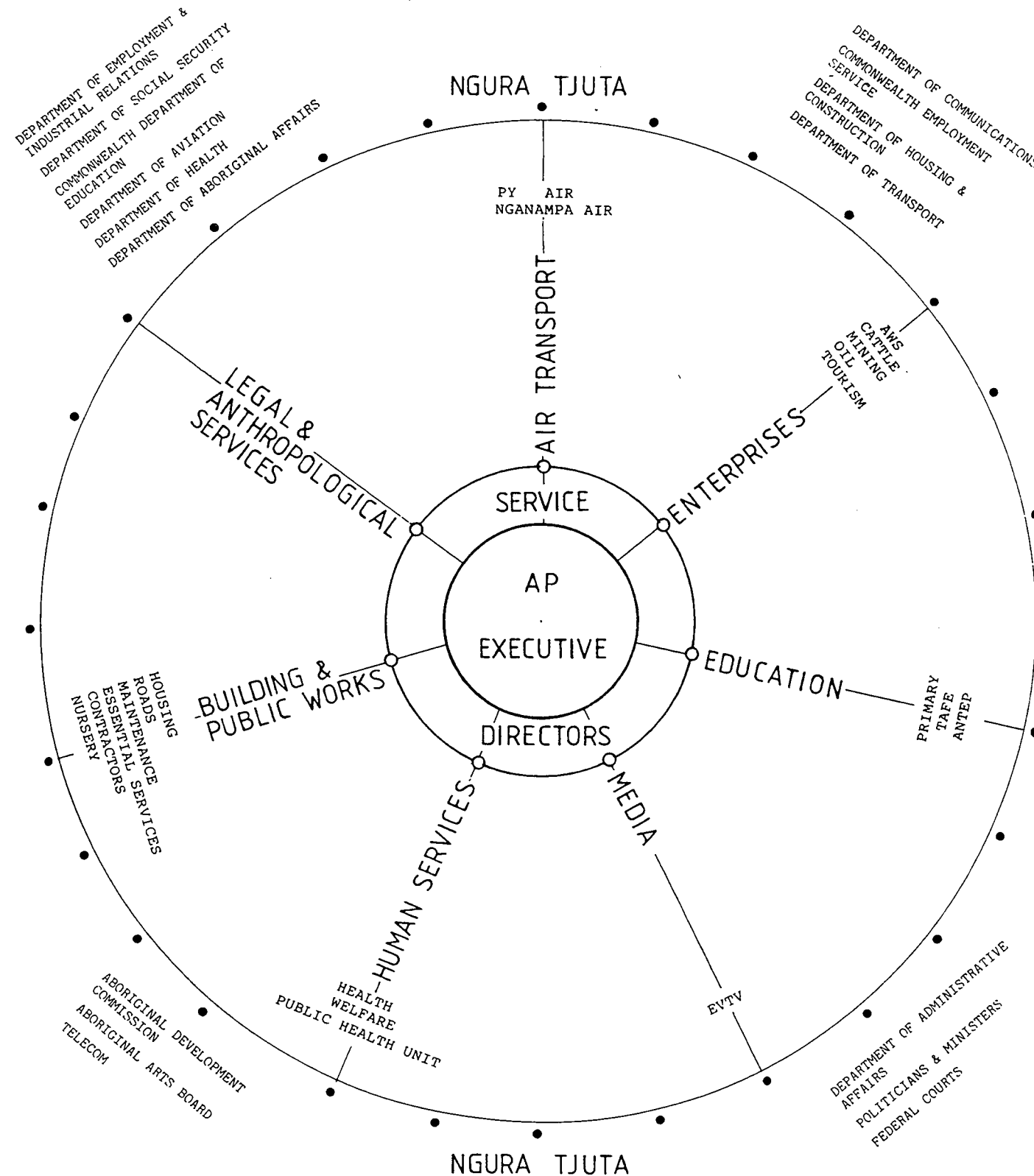
Participation in management structures at local level allows real Anangu decision-making to occur. This involves two issues:

- the setting of priorities
- the development of aims and objectives of programmes.

There are major problems in applying these community management principles at the local level. Firstly, in each community there are insufficient human and capital resources. The relatively small population means that individual settlements are unlikely to have sufficient numbers of external or indigenous skilled personnel to administer and implement all necessary programmes. The most obvious means of achieving this is for a regional body to co-ordinate the sharing of skilled personnel and expensive equipment. This should be effective and cost efficient.

Another major reason for a regional co-ordinating body is to provide a means

Fig. 3.1 PROPOSED ROLE OF ANANGU PITJANTJATJARA



of 'filtering': co-ordinating the large number of government and external agencies which deal with the Lands.

For this reason a principal recommendation of this Review is that Anangu Pitjantjatjara should assume a management and co-ordination role throughout the Lands, and be provided with the necessary resources and infra-structure to accomplish this (see Figure 3.1). Under the Pitjantjatjara Land Rights Act 1981, AP clearly has a responsibility for planning, co-ordination and management of the Lands. To date, however, AP has been restricted in the conduct of its role due to a lack of resources and structure.

The empowerment of AP to fulfil its regional responsibilities would allow Anangu to filter information and relieve pressures from the myriad of agencies which now descend upon communities. In 1986 alone, AP issued more than 3000 visitors' permits, exceeding the total population in AP Lands. The actual number of visitors could be higher, as government officers are not required to obtain permits and multiple re-entries can occur.

Clearly, the increase in AP's role and infrastructure will occur over time and probably with step-wise increase in resources and functions. This graduated development is appropriate so that Anangu on the Lands can be involved in planning the AP development.

The potential problems associated with increased regionalisation - principally the alienation of Anangu from decision-making processes - must be avoided. The Review recommends a number of changes to help avoid these problems. These are that:

- an AP office on the Lands be established. The Review believes that AP would need to establish at least a minimal administrative base on the Lands at the earliest opportunity, even if this means raising the requisite finance from its affiliated organisations.

Some of its resource staff could continue to be based at the Pitjantjatjara Council Resource Centre in Alice Springs, which is now linked to most communities by telephone;

- community control be maintained and supported. The Review has noted that communities do not wish to relinquish day-to-day control of their affairs, and it is not recommended that a regional body should attempt to do this. At the same time, however, communities and individuals have expressed concern over the costly demands in terms of time and attention made by outside organisations seeking consultation at community level. It is recommended that alternative methods for consultation be investigated, discussed and adopted by AP with communities and government agencies;
- a flexible and responsive system for consultation and action between AP and communities be developed and adopted. Communities must retain the ability and responsibility to recognise and act on a need without fear of cumbersome bureaucratic intervention, as well as the ability to request relevant advice and assistance of, and the ability to share power with the regional body without loss of control.

Beyond the local community and regional community levels, there is a third level of management which directly affects Anangu well-being. This is the management of government instrumentalities. It was noted by the Review that there are more than 70 agencies and groups which a community or its representatives must liaise with in order to obtain the goods and services necessary for life. This multiplicity of service agencies and the complications of combined Commonwealth and State government responsibilities do not assist the rationalisation of service delivery.

The Human Services Review (South Australia 1987a) summarised the situation on the AP Lands by stating: "The picture that emerged for the Committee in the remote Aboriginal communities, particularly in the Pitjantjatjara Lands, is one the Committee would describe as chaotic in public administration terms. It is one of large numbers of government officials making frequent, often quick, visits to the communities... to discuss issues that clearly require consideration by more than one government body".

The Review endorses the concept that more effective use of government resources can be achieved by various agencies negotiating through AP, although extensive negotiations with communities would continue when appropriate.

At a local community level, it is often difficult for Councils, Advisors and management personnel to conceptualise a Regional Community overview. While maintaining a high level of community control over local community interests and issues, AP must be able to assist individual communities in the development of management systems and the maintenance of essential community services.

It was disturbing to note that a living environment which the majority of Australians would see as appalling, for example grey water and effluent lying in pools in and around houses, is often accepted as 'normal'. This deficiency in basic public health facilities may have existed for so long that all groups including Anangu, community councils and government seem to take the situation for granted.

At a community level, the Review understands that the work load is high, resources are scarce, working conditons erratic and that the community reality is often one of 'crisis management' (see Figures 3.2 and 3.3). But it is in this kind of situation that a community must make correct choices if an improvement

Fig. 3.2 COMMUNITY INTERNAL FUNCTIONS

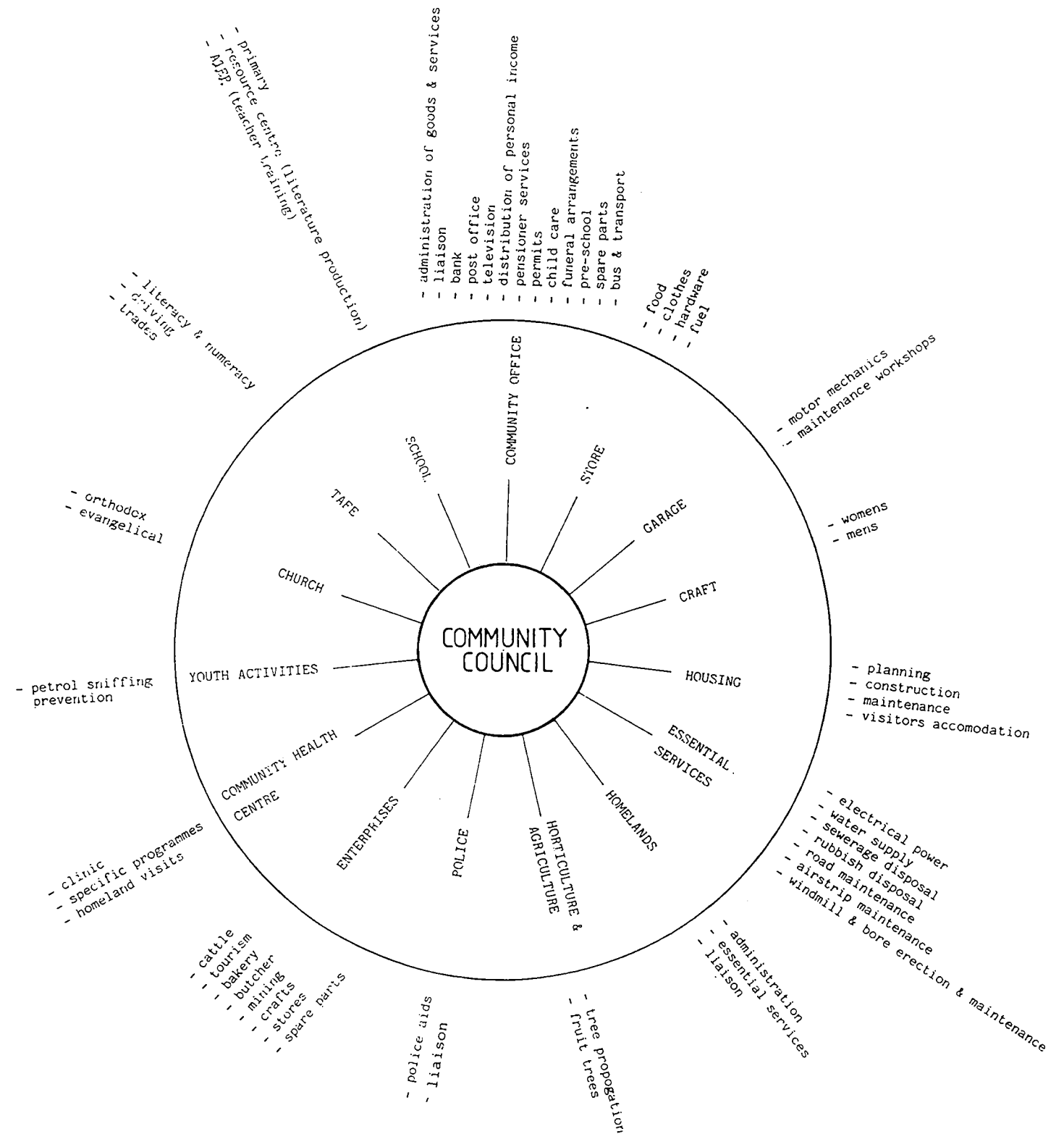
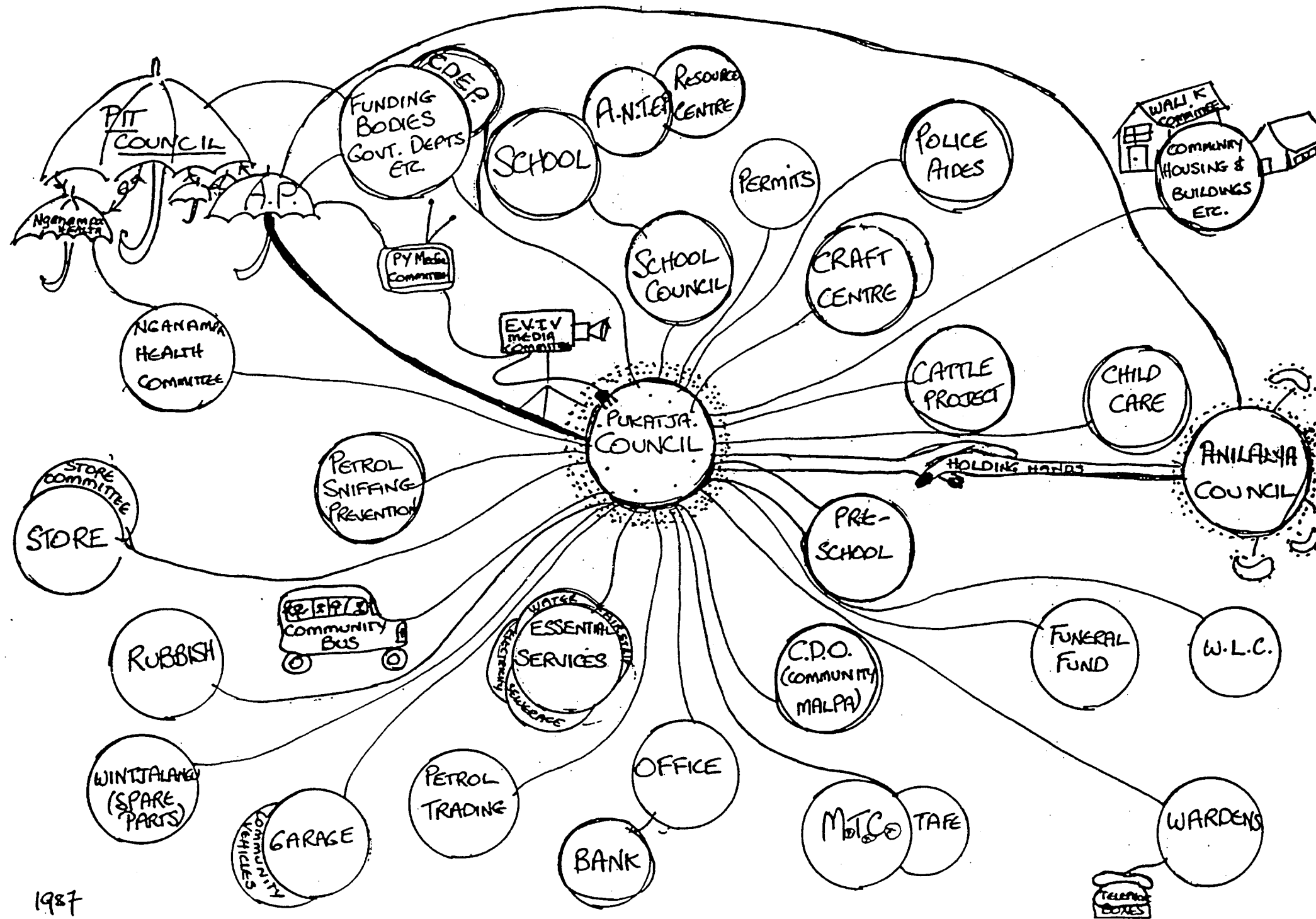


Fig. 3.3

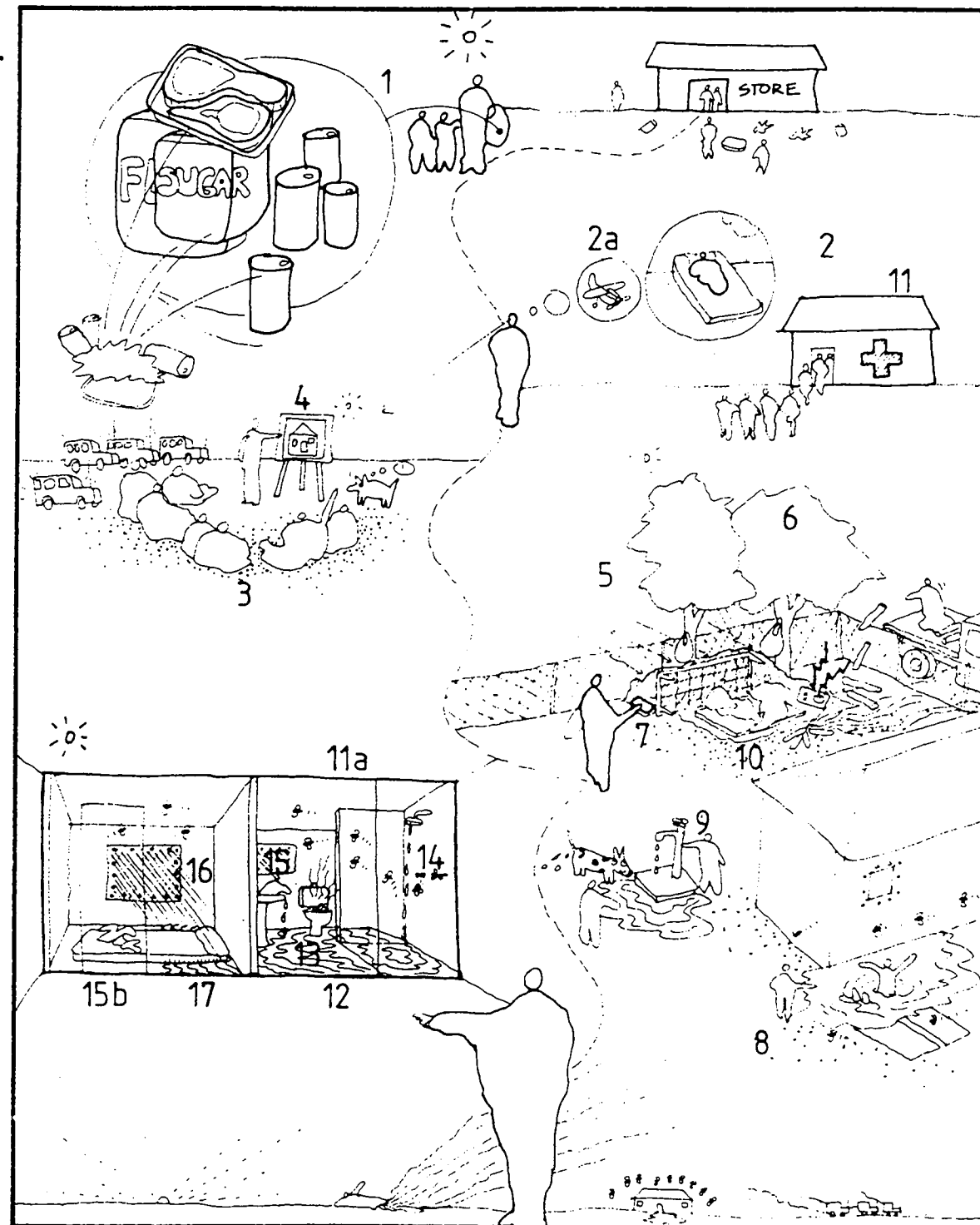


in public health is to occur. The prioritisation of community work should take into account the following three points:

- allocation of human and physical resources towards the development and maintenance of essential services, eg water, stores, shelter, waste disposal, temperature control;
- recognition of healthy living practices as priorities for well-being (points 1 to 9);
- development of short and long-term community objectives, which emphasise community well-being.

Anangu need to address the 'new' problems associated with current life on the Lands. For example, they will have to decide on housing options and plan the maintenance of this housing. Similarly, they need to select appropriate food from community stores. It is for this reason that many recommendations within the Review are directed to Anangu.

AN AVERAGE ANANGU STORY



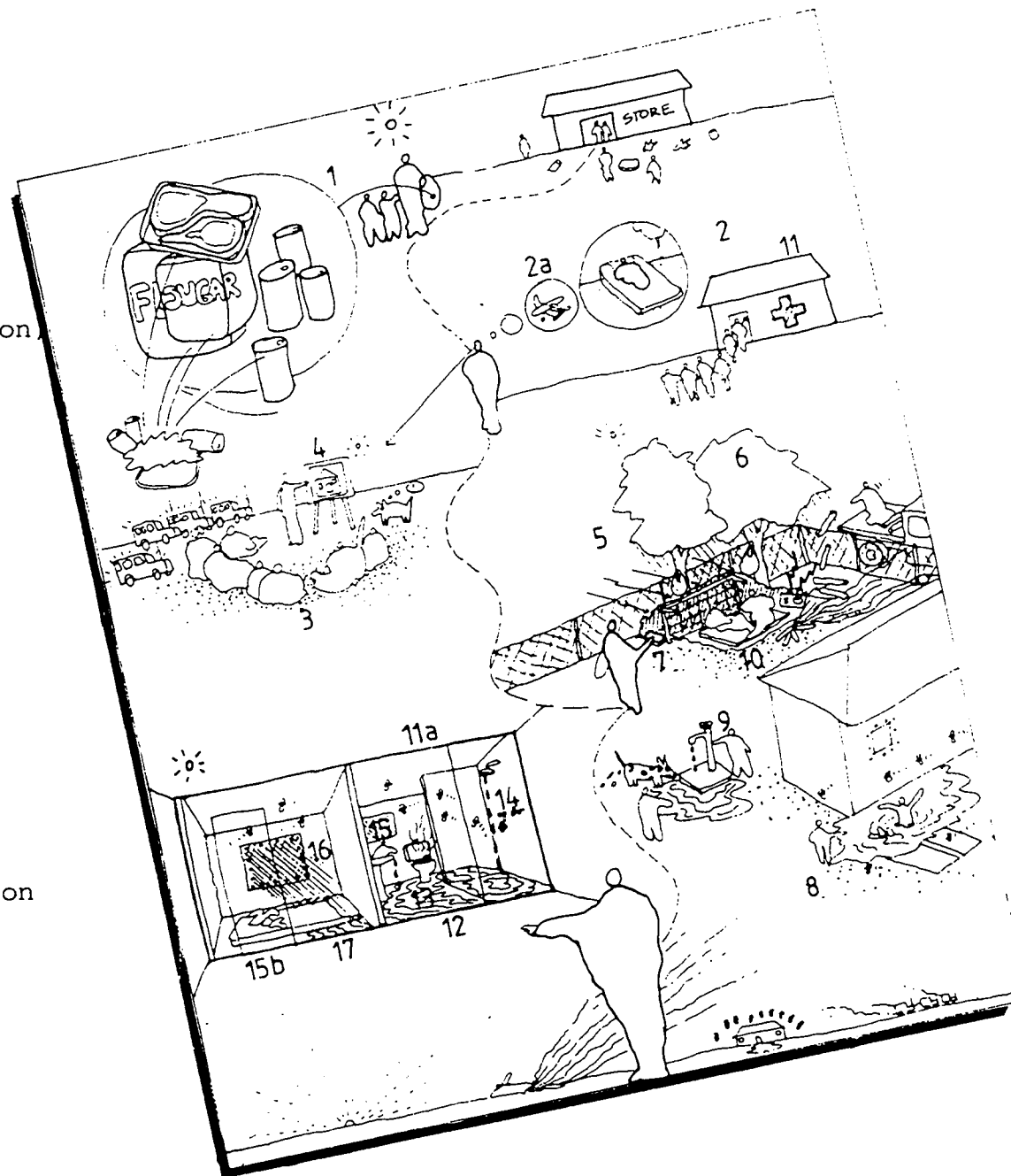
IT IS LATE SUMMER AND THE TEMPERATURE IS 40 DEGREES, YOU ARE WALKING HOME FROM THE COMMUNITY STORE CARRYING THE FOOD YOU WILL EAT FOR DINNER, ONE PACK OF MEAT, A PACKET OF SUGAR, A BAG OF FLOUR AND 4 COOL DRINKS FOR YOUR KIDS (1). YOU HOPE THAT YOUR YOUNGEST CHILD (2 YEARS OLD) IS FEELING BETTER SINCE VISITING THE HEALTH CLINIC THIS MORNING (2). A TRIP TO ALICE SPRINGS MAY BE NEEDED? (2A). YOU PASS A COMMUNITY MEETING (3) AND RECOGNISE FREQUENT VISITORS TO THE COMMUNITY, DAA, ADC, AHB, ADVISORS AND THE COMMUNITY COUNCIL ARGUING ABOUT HOUSING MONEY AND WHAT TYPES OF HOUSES TO BUILD (4).

The ANANGU STORY was constructed to show how many small factors combine to have a dramatic impact on the day to day lives of Anangu living in the larger AP communities. Whilst this is not a complete 'model' of all aspects of life on the AP lands it should indicate the fallacy of considering health, management or environment issues in isolation.

IN YOUR HOUSE YARD YOU SEE OTHER CHILDREN PLAYING AND ALL YOUR FAMILY OUTSIDE (5) SITTING UNDER TWO OLD SHADE TREES (6). YOU EXPLAIN HOW YOU SPENT ALL YOUR WEEKS LEFT OVER MONEY (AFTER FOOD, CLOTHES AND PETROL) ON A CASSETTE TAPE WHICH WAS ON SPECIAL FOR \$9.00. (7) TWO OF THE KIDS ARE PLAYING IN A POOL OF SMELLY WATER NEAR THE BACK OF THE HOUSE (8) AND THE OTHER TWO ARE PLAYING WITH THE DOGS UNDER A YARD TAP WHICH IS CONSTANTLY DRIPPING (9). TWO OLDER RELATIVES ARE STARTING A FIRE FOR DINNER IN THE SHELTER OF A BED FRAME COVERED WITH AN OLD TARP (10). YOU REMEMBER THE CLINIC SISTERS ADVICE, EXPLAINED TO YOU BY THE HEALTH WORKER (11), TO WASH YOUR TWO YEAR OLD CHILD IN THE EVENING SO YOU GO INTO THE HOUSE AND TO THE BATHROOM (11A). THERE IS A BAD SMELL AND IT IS VERY HOT THE MINUTE YOU ENTER THE HOUSE (12) THE BATHROOM FLOOR IS COVERED IN WATER AND THE TOILET APPEARS TO BE BLOCKED (13). ONE SHOWER TAP HAS FALLEN OFF (14) SO YOU DECIDE TO USE THE BASIN. IT IS TOO SMALL TO WASH THE CHILD IN AND IT IS ONLY AFTER YOU START THE WASHING THAT YOU DISCOVER THERE IS STILL NO HOT WATER (15). THERE IS NO SOAP OR A TOWEL TO DRY THE CHILD SO YOU USE YOUR SHIRT AND MAKE DO (15A). YOU GO INTO THE NEXT ROOM TO GET CLEAN CLOTHES FOR THE CHILD (15B), THE SUN IS STREAMING IN MAKING THE ROOM EXTREMELY HOT (16) AND YOU DISCOVER THAT WATER SEEPING FROM THE BATHROOM HAS SOAKED ALL YOUR BEDDING AND CLOTHES ON THE FLOOR (17). DINNER FINISHED, YOU SET A SMALL FIRE IN THE YARD AND MAKE CAMP FOR THE NIGHT - YOU HAVE JUST EXPERIENCED ANOTHER AVERAGE PITJANTJATJARA DAY.

THE STORY EXPLAINED

1. U.P.K study demonstrated that Anangu adults daily sugar consumption/capita was equal to 66 teaspoons of sugar not including the sugar contained in cool drinks. (see nutrition)
2. Nganampa Health Council staff recorded 36,500 clinic attendances during the year 1985. (Nganampa Health Council Annual Report, 1986).
- 2A. Aboriginal children are hospitalised for pneumonia 80 times more commonly than Caucasians.
3. Over a period of 3 months at Aparawatatja 142 separate meetings, to discuss internal and external matters, were recorded.
4. Despite all the discussions of "housing" by Government; Aboriginal agencies and communities, it seems highly improbable that either the funding (\$10 Million over 5 years) or organisational infrastructure (design, consultation, contract administration and building supervision) will ever exist to "house" all Anangu living on the Pitjatjantjara lands. (See "Housing - an Improbable Dream")
5. 80% of Anangu spend on the average 70% of the time outside the "house".
6. The prevalence of mature shade trees over immature shade trees around dwellings would indicate either a lack of recent planting programmes associated with houses or poor siting, irrigation and protection of new planting.
7. Personal income research shows that a household of 8 has an average income of \$393/week of which \$264 is spent on food (\$200), clothes (\$50) and fuel (\$14). This leaves a weekly disposable income of \$129.00 for each household or \$16/person. (Indulkana community Dec.'85 - June '86.)
8. The disposal of waste from the living area is perhaps the greatest "housing" failure. Septic tanks and soakage trenches, where they existed, were a particular source of yard pollution.



9. A quarter (25%) of all yard taps were found to be not functioning. In one community this figure was as high as 52% of taps not working. It is important to note that some houses (nomad type) have their only source of local water supplied by an external tap.
10. People live outside the house. Of 67 houses surveyed, 103 recently used outside fire areas were recorded. 50% of all houses had more than one fire area. Small wiltjas, bedding or cooking utensils were almost always associated with yard fire areas.
11. 1 Dentist, 5 Doctors, 13 Nursing Sisters and 35 Health Workers (sharing 22 full-time positions) within Nganampa Health Council are responsible for the delivery of health care across the A.P. lands.

- 11A. On average, 9 people will be using the bathroom facilities of any house. Given that the toilet and washing facilities (and in most cases laundry facilities if they exist) are combined in the one room, the load on the facilities is further increased.
12. Only 43% of all waste services are working satisfactorily resulting in foul water collecting within the "house". As only 67% of all windows are able to ventilate the chances of removing smells are reduced.
13. Poor floor grading, blocked waste pipes and failed flush toilets are the major contributors to wet area failures and often render the house uninhabitable when foul water infiltrates other rooms.
14. Poor access to cold water is due to failure of water control points within the "house" rather than lack of mains water supply or reticulation.
15. On average only 50% of all hot water installations are able to supply hot water. In one community hot water is only available to 21% of installations.
- 15A. The availability of these personal health hardware items is dependent upon store policy and available personal income.
- 15B. The average house has 2 bedrooms with an average house area of 77 sq.metres. On the basis of an average 9 people/house on the A.P. lands, the average suburban Australian house (130 sq.M.) would be accommodating 15 people.
16. 67% of all houses have an orientation that could be considered marginally beneficial. Only 31% of houses have verandahs which would provide any benefit to the comfort of the house or outside areas.
17. The failure of 57% of all waste removal installations; the inclusion of wet areas in the central core of the house and bathroom floors raised higher than surrounding rooms usually means that any failure of the wet area quickly spreads throughout the "house".

4.1 Methodology

4.1.1. A Co-operative Approach

As the causes of ill health are complex and multi-factorial, so too are the solutions. Having established a comprehensive clinical health care system, the NHC approached the South Australian Minister of Health to seek his co-operation in establishing a joint Review, which would assess the environmental and public health conditions throughout the AP Lands.

In proposing the Review the NHC recognised that it could not successfully operate in a vacuum, and that it would require the assistance of government to overcome the problems which a Review would document.

In agreeing to participate in the Review the Minister of Health, and his Officers, demonstrated their understanding that community-based initiatives are the appropriate starting point for social change. (See Figure 4.1.1)

4.1.2. Preliminary Consultation on the AP lands

As the survey, and the Review in general, covered the whole of the AP Lands, an AP general meeting held at Fregon in October last year seemed the appropriate venue for the Review to be formally sanctioned by the people.

Punch Thompson spoke of the Review at the meeting and there were many informal discussions. The meeting decided to support the Review. This was typical of the role of the Anangu researcher - their main involvement was in meetings and informal discussions.

To further promote discussions and awareness of the Review, a short video was made to introduce to Anangu the aims and possible effects of the

Review. This was designed specifically for community viewing and was circulated throughout the AP Lands.

The effectiveness of the video and initial discussions with community members by the R and D Team's Anangu researchers was an important factor in gaining access to living areas. This allowed the depth of survey work later carried out. (See Figure 4.1.2)

4.1.3. Information Collection

A. Design and preparation of living area survey on the basis of:

- a) Previous 'housing'/health surveys. (SAHC Health surveyors, ADC housing surveys).
- b) A preliminary visit to all major communities and many homelands by the R and D Team.
- c) The health focus of the Review.

The following decisions were made:

- i) The focus of the survey work was not housing but living areas. Over half the items surveyed concern the area around the house (as it appeared that was where Anangu were living). eg orientation of the house, verandahs, outside wiltjas, fire areas, shade trees, taps, fences, etc.
- ii) In addition to the survey sheets as a means of building up a data base, numerous requests for information regarding the AP Lands were made to external agencies and Anangu regional bodies.

eg water supply and storage, hard waste disposal, maintenance, stores, water borne waste disposal system (CEDs) and housing information.

Fig. 4.1.1 THE CO-OPERATIVE STRUCTURE

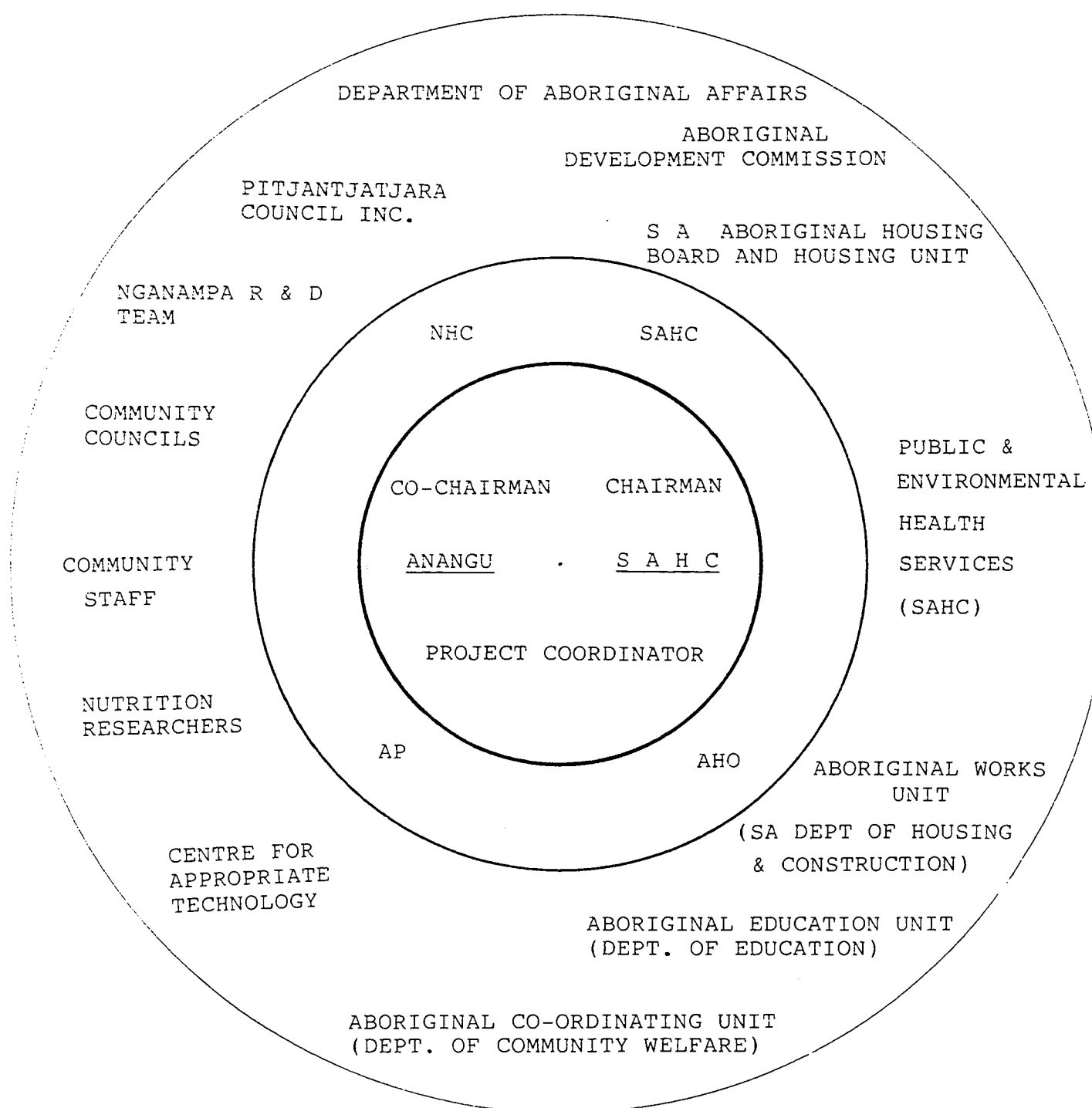
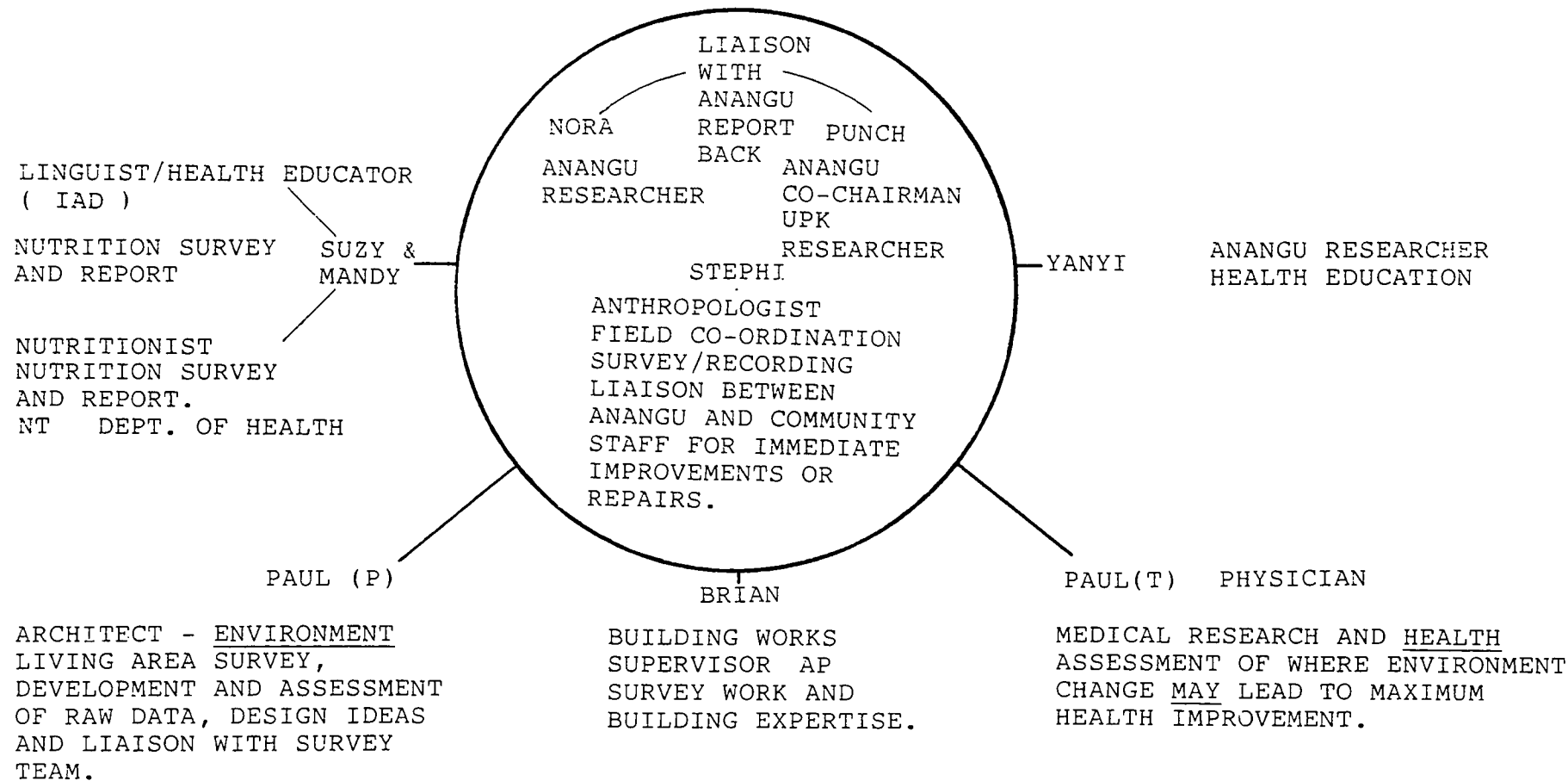


Fig. 4.1.2 THE R & D TEAM

THE DIAGRAM SHOWS THOSE INVOLVED WITH THE BULK OF FIELD WORK FOR THE REVIEW.



- iii) In structuring the survey, stress was placed on:
 - Safety (electrical, structural);
 - Services provided by the outside living areas, (where people 'appeared' to live);
 - Services provided by the house (water - hot and cold, waste removal, power, ability to cool or provide warmth);
 - Population and demand placed on the services of the house and yard;

Things such as the age, shape, type or construction method of the 'houses' were seen as being of low priority.

B. Nutrition research

The process of initial consultation using an Anangu researcher with good local knowledge enabled the nutrition study to be completed efficiently.

C. Researching information held off the Lands

The main sources of information were:

- i) Essential services information (PC);
- ii) Health statistics, NHC Reports;
- iii) Health survey records, health surveyors, SAHC;
- iv) Housing construction and maintenance for teacher housing (SA Teacher Housing Authority);
- v) Housing costs and maintenance and evaluation of past project (AHB and SAHT);
- vi) Maintenance costs (ADC);
- vii) Funding generally (DAA).

4.1.4. Field Work

A. The Survey Routine

A general point on working in the field was to allow adequate time in the community to minimise the intrusive impact and to give community members enough time to appreciate the need for the intrusion. We tried to spend at least three weeks in each major community. This would allow for a week of people getting to know what we were there for and what it was all about, and two weeks to collect information and give immediate 'feedback' information to the community. (This time scale allowed for contingencies such as ceremonies, meetings, sorry business or football).

The extraordinary number of meetings being held to discuss a wide range of other business placed extra pressure on the Review. The most obvious way around the situation was to allow enough time. People were often pleased to know that we were not rushing off, that we would be around for at least a couple of weeks and that we intended further future visits.

Getting the housing survey underway took some time. One of the reasons was that we needed to gain the confidence of the residents. People felt awkward about strangers entering their house. Embarrassment involved was generally overcome by the Anangu researchers with constant explanations about the purpose of the Review.

The usual approach followed was to make an appointment with the owner to look at a house. We would then be taken to the house and instructed to get on with the survey. Often the householder, sometimes after prompting, would guide us around pointing out problem areas in the house. We would look at the living area, the outside of the house, the

inside and the yard. Meanwhile the Anangu team members would talk to other residents about various issues relating to the Review, particularly the population of the house.

B. Providing immediate benefit to communities

Time was also spent talking with individual community representatives and staff, eg the Chairman, Director of the Health Service, Council members, essential services officers and builders.

These discussions often met with initial reservations because people were doubtful about the usefulness of the Review. They argued that many surveys had been undertaken with no follow up results. (This is possibly a legitimate criticism and it puts the onus on all agencies involved in the Review to act on its recommendations.)

It became apparent that to maintain the confidence and support of the communities it would be necessary to give 'instant' examples of how UPK work could benefit them in a practical way.

A list of houses requiring immediate attention that could be attended to using the resources available in the community was compiled. Certain houses with minor problems were rendered operational with some practical support and our continued interest in their status during the time we spent in the community. As a result some taps were fixed, septic pumps out, and electric fuses replaced.

C. Discussion of findings in each community with Anangu and staff

'On site' analysis of housing and living area survey information allowed the R and D Team to report back immediately to the community involved. This was done in three different ways:

i) an informal meeting arranged by Punch. Those present usually included a combination of the Community Chairman, the Director of the Health Service, Council members and a Womens' Council representative;

ii) a general community meeting;

iii) a health service staff meeting.

4.1.5. Analysis & Assessment of Data

From the survey sheets completed in the field information was gathered on the following areas.

i) Occupants of the house (number, age, family).

ii) Plan of the house and yard area.

iii) Condition of the building fabric:

walls
roof
ceiling
floor
doors
windows.

iv) Services of the house

Electrical

(Mains connections, switchboard fuses, light point, power outlets)

Water

a) cold water (taps in all areas/internal and external)

b) hot water (hot water system type, capacity, condition)

c) taps (condition and types of failure)

Waste removal

(Bathroom, toilet, kitchen and laundry areas all waste pipe

diameters and condition, obvious failures, blockages and if infiltration affected other rooms in the house).

v) Heating and cooling

(Provisions for heating or cooling houses, e.g. trees, fans, pot belly stoves or fireplaces, etc);

vi) Fittings

What the house contains? (eg beds, cupboards, refrigerator, etc);

vii) Yard information

Orientation. Is there any beneficial effect to yard or house from building orientation?

Verandahs. How many? Are they beneficial?

Fencing. How much of the yard is fenced and how high? External water points in the yard?

Trees. Number of mature and immature trees/plants in the yard area?

Fire areas. What indications exist to show outside living is occurring. (Wiltjas, camp, cooking utensils, etc).

In assessing this data, priority was given in the areas most likely to affect health.

1. Washing people (water supply, taps, hot water, waste);

2. Washing clothes (water supply, taps, waste, power);

3. Waste removal (drainage, pipe sizes and water control);

4. Nutrition (food growing in surrounding yards, cooking facilities, fire areas);

5. Reduce crowding (area of house, population, link between size

and population, use of area around house);

6. Separation of dogs and children (water sources to attract dogs);
7. Dust control (existing planting, orientation to winds blowing dust, details in housing to limit dust entry);
8. Temperature control (ventilation, orientation, planting, verandahs);
9. Trauma reduction (wall construction and damage, electrical fittings, glass in windows).

4.1.6. Preparation of UPK Progress Report

The Progress report was circulated in January 1987. It provided:

Introduction and reports

Attachment 1 - Health status of Aboriginal people in AP Lands

Attachment 2 - Interim report by R and D Team

Attachment 3 - Nutrition study

Attachment 4 - Health Surveyors' reports. SAHC, 1972-86

Attachment 5 - Water sample test results and water quality discussion paper.

4.1.7. The Final Report

This report is aimed at:

- ° Government departments and agencies;
- ° Community staff on the AP Lands.

The focus of the report is clearly the section - "Health hardware for healthy living". All other sections of the report aim to:

- i) expand on the nine areas of health hardware;
- ii) provide the survey information, or methodology used to arrive at certain decisions;
- iii) provide essential data base material for future reference;
- iv) provide information and description on philosophies and systems of management that will allow the nine areas of health hardware to be implemented.

4.1.8. Reporting Back

- a) Publication of the report.
- b) Verbal report and video production for Anangu on the AP Lands.

For Anangu to be able to make sensible decisions about planning to improve their environment and health, clear information must be presented for their consideration. The production of a video setting out the main points of health hardware and reporting back process will encourage discussion of the following areas:

- ° The historical process which led to the present 'semi-nomadic' lifestyle of Anangu - the introduction and use of new technologies, the changes they have already made and their current reliance on foreign systems and technologies over which they have little control.
- ° The need for a plan of management which would embody their thoughts and aspirations and give them some measure of control over these new technologies and systems which have been superimposed on their traditional environment.

Anangu can only make meaningful choices on the basis of relevant comprehensive information

consistently delivered and in a form that they can easily understand.

It is hoped that Review Report will provide Anangu with some relevant information and recommendations which they can use to develop a plan of management for the AP Lands.

4.2 Findings of the Field Survey

The findings set out below are the result of survey work carried out by the R and D Team during the period, November 1986 to June 1987 (see Table 4.2.1 for the detailed results).

The following general points should be noted:

- (i) 'Total' Population Housed (ie people associated with a "constructed" dwelling or yard area)

Surveyed in main communities = 743

Surveyed in 15% of homelands = 125

Therefore assume total homelands population = 950

Assuming some people in homelands have a recorded association with a community 'house'. Say 1/3 of homelands housing population (1/3 x 950 = about 320).

Therefore total 'housed' population [743 + (950 - 320) = 1373].

With a total estimated population of 2000 Anangu and 400 non-Aboriginal people on the AP Lands it is clear that the following survey results and conclusions apply to about half the total Anangu population.

This is important when considering the demand placed on health hardware facilities. The average of eight people/house is based only on people known to be associated with the surveyed houses. The figures above show that the 'real' population figure could be, and probably is, as high as 16 people/house.

- (ii) The survey time period: bridged a range of climatic seasons and as such should cancel out any seasonal bias (eg fire areas assessed only in winter, people away for ceremonies, etc)

- (iii) Percentage 'scores': Interpreting the data on areas such as services was done on a score basis.

eg 'Cold Water' has various components

- overall supply to the house
- particular supply points inside and outside the house
- condition of the taps, handles and spouts

The overall assessment score reflects the ability of the services to deliver water to the residents.

0-29% Almost no water delivery possible without major works

30-49% Water available, but to minor outlets only

50-69% Water generally available with poor control

70-90% Minor control problems only

Other services (electrical, waste) were "scored" in a similar manner.

- (iv) Vandalism: During the Review the R and D Team was often confronted with the opinion that most housing failures were the result of vandalism. Whilst some vandalism could not be denied, there is substantial evidence to show that most vandalism occurs after a building has failed (and therefore is vacated and judged useless).

More disturbing to the R and D Team than vandalism were the faults found in new or almost completed houses - particularly wet area faults such as:

- concrete in drainage lines;
- unsecured water supply lines;

- external exposed copper pipes (easily damaged);
- window damage resulting from transportation;
- poor soakage trenches associated with septic tanks;
- full wet areas provided in houses with no access or connection to a water supply.

4.2.1. Houses/Population

The population of each house is extremely hard to assess in real terms. The following would be fair assumptions given the data collected:

- (i) The areas around a house are used far more consistently than the house itself. People inside/outside at the time of inspection and random checks at 5.30 am, 12 noon, 3.30 pm and 10 pm confirm this. Another indicator is that 83% of houses have recently used fire areas outside: mattresses, bedding and cooking utensils are commonly associated with these fire areas.
- (ii) Despite this high use of outside areas around the house 31% of all houses surveyed have no verandah of any sort.
- (iii) The population of a house and surrounding yard area does not relate to the size of the house. An area/person average range of 21.5 sq m/person to 4.8 sq m/person is extremely high.
- (iv) Given the average population/house density of around eight people (which would be conservative as it does not include visitors) the size, accommodation and servicing of the housing provided, given a suburban

model, would be totally inadequate.

An average density of 1 person/10 sq m and average number of 2 bedrooms/house would equate to 15 people using the average suburban house with over seven people/bedroom.

- (v) The most obvious effect of population on the house is in the area of demand on water and waste facilities.

4.2.2. Walling/Fabric of Buildings

- (i) 47% of houses use fibrous cement sheeting either inside/outside or both. Damage to this brittle material is extremely high with 69% of all houses using this material having some damage (eg 18 houses or 72% of all houses at Pukatja have had repair work done to this building fabric in the last year alone).

Of those houses not using fibrous cement (53% of all houses) only 13% are damaged - a sharp contrast.

- (ii) Whilst walling or fabric damage may not have many direct detrimental health consequences (except providing an accident potential leading to trauma), it provides a poor base for:

- i) wet area finishes
- ii) high use fittings such as taps, switches, power points.

The repair of walling fabric can also divert funds from the more vital functions of maintaining health hardware (cold and hot water, waste, etc).

4.2.3. Windows

- (i) A large number of windows are regularly replaced leading to high levels of maintenance and finally the fixing of polycarbonate sheeting

permanently into the opening stopping any ventilation.

47% of all windows (337) have been 'obviously' repaired or replaced. 72% of all windows are able to ventilate. In some houses no ventilation is possible. This denies the house the most basic form of temperature control.

(ii) There is sufficient evidence to show that metal shutters or louvres perform far better than sliding type glass windows. In Amata 95% and Kalka/Pipalyatjara 98% of windows are able to ventilate with replacement or repair being as low as 23% and 2% respectively. This is due to the high proportion of metal shutters and louvres used. By way of comparison in Aparawatatja 53% and Pukatja 55% of windows are able to ventilate with replacement being 51% and 65% respectively. In both these communities the main window type was vertical/horizontal aluminium sliding windows.

4.2.4. Electricity

(i) A visual inspection of switchboards, earth connection, GPOs, switches and light fittings indicated that the power systems of the houses are fair. 65% of electrical installations are functional. Whether these installations would pass load testing or comply with current standards is not known. However, it would appear that power and light are available through a functioning fuse/circuit breaker system to this percentage of installations.

(ii) It would appear that in order of priority:

- lighting;
- hot water (only 45% of hot water installations work);

- cooking (stoves are often inoperative);

are the main loads placed on the electrical service of a house. Few appliances were noted, and those were generally of low power use (eg videos, radios) not electric heating or cooling.

By comparison most staff houses have high heating and cooling demands and a wide range of electrical appliances (refrigerators, freezers, etc) as well as hot water, cooking and lighting.

4.2.5. Water (Cold & Hot)

(i) 60% of cold water installations are OK 45% of hot water installations are OK

(ii) Toilet cisterns would appear to be one recurrent cause of water supply failure with eight houses (32%) in Pukatja requiring new cisterns during one year.

(iii) The supply of hot water ranges from fair in Amata (70% OK) to extremely poor in Indulkana (21% OK). Failures are due mainly to hot water systems rather than supply piping or tap control.

(iv) Electrical hot water units appear to be the most efficient with many functioning solar units suspected to be running mainly on electric boost. Solar units suffer from:

- poor roof mounting (particularly the older units);
- high water salts (only heat exchange units survive);
- Physical damage to collectors;
- Low capacity - particularly older units.

Further comparative work on water heating should be carried out to ascertain:

- (a) A performance comparison of different heating methods with hot water systems of similar age.
- (b) If solar units are functioning primarily on electric boost.
- (c) If solar units with electric boosters were put onto a night timeswitch (to ensure the use of 'off peak' generating capacity) and the collector plates were adequately protected the unit could be seen as providing:
 - A solar unit with 'off peak' back up. If there is no power, there is solar heating.
 - An electric 'off peak' unit with solar top-up to conserve power.

Chip heaters, when properly connected, appear to function well and are well utilised. Their low capital cost and simplicity of operation are appealing. Installation and control problems (taps) are the major causes of failure on homeland installations surveyed.

4.2.6. Waste

(i) Of all the aspects of living areas surveyed the worst without question was the disposal of water-borne waste both in the failure rate of the facilities and the consequences of the failure to the dwelling.

Causes of the defects were:

- in-slab drainage with small piping and waste outlets which block easily;
- lack of adequate floor waste outlets in bathrooms;

- poor grading to floor wastes;
- Flush toilet blockages (aided by poor cistern performance and lack of toilet tissue leading to the use of rags, etc which block the toilet or septic tank).
- (ii) Failure of the waste removal services often leads to the overflow to or infiltration of waste into other rooms of the house. This is an increasing problem where:
 - bathrooms are located centrally within the house;
 - bathroom floors are often at a similar or greater height than surrounding floors.

Poor ventilation (see 4.2.3 Windows) and heat in summer compound the effect of failed waste services.

Whilst overall 45% of all houses have adequate waste facilities, some communities are well below this average:

Indulkana	31% OK
Pukatja	35% OK

A further indicator of the problem of waste disposal is highlighted at Pukatja. During the last year eight houses (32% of all) have had major wet area problems requiring attention from the community builder. Despite this work, only 35% of houses were found to have working waste systems.

4.2.7. Yard Survey Information

Given the indicators on usage, people use the areas around the house more intensively than the house itself (4.2.1), and that population densities could not be serviced by the average house area, a detailed survey of the surroundings of each house and the facilities provided shows the following:

(i) Orientation

55% of all houses had an orientation that could be considered in any way beneficial to house or yard. This assessment considered:

- Axis E-W for 'long' house types;
- Orientation of openings and verandahs to cold S-E winter winds;
- Orientation of windows for "square" house types.

This category does not take into account the examples of poor building siting:

- house built in wrong place;
- house located in an area where mains services were not available;
- culturally sensitive site chosen for house;
- flood-prone sites.

(ii) Verandahs

31% of all houses have no verandahs of any sort. Of those houses with any sort of verandah only 47% have verandahs to the north or west which may benefit the house as well as providing useful outdoor living area.

62% of all verandahs (note: some houses have more than one verandah) are to the south or east which would give little shading to the building from sun penetration and would be exposed to the prevailing cold S-E winds.

It is important to note that the number of verandahs recorded is boosted significantly by 'Nomad' type structures. Many of these verandahs have been infilled, perhaps reinforcing the survey finding of poorly oriented verandahs.

(iii) Fencing

63% of all houses had fences around at least half of the area around the house. Almost all of these fences are 1.2 m high or below and made of arc mesh. Wiltjas and fire areas are almost always incorporated into the areas of fencing.

There is survey evidence to show that:

- fencing may encourage outdoor living areas - by providing protection;
- mature trees combined with fencing provides both shade and vehicular protection for outdoor living areas;
- fencing of 1.2 m or lower has no significant effect on the survival of immature planting in yard areas.

(iv) External Water Supply

113 external taps were serving 89 house yard areas, the tap points were generally in fair repair with only 28 (24%) leaking, poorly fixed or missing handles.

There seems no correlation between outdoor fire/camp areas and standpipe locations.

There is a definite link between yard planting and number of working taps available. The three communities with the highest total planting also have the most external tap points.

(v) Trees and Planting

The number of mature trees (5 m+) around houses is 374, and immature trees (5 m-) 298 would suggest either settlement and housing have occurred near existing trees or substantial planting was commenced 10-15 years ago. Given the configuration and species of the trees, the latter is more likely. The lack of successful recent planting is obvious. Little

provision exists for watering new planting (no hoses and single tap points make it difficult for drip systems or constant hose watering). Where taps are available more trees occur.

With the number of vehicles now present in communities and vehicle access to most yards is the norm, new planting needs to be heavily protected from damage.

Problems of dust and water erosion are increasing due to absence of ground covers, bushes or lower immature trees.

Very few of the trees growing produced food but they do provide wind protection and shade.

It is also interesting to note that the two communities with the highest population/house and yard have the most immature trees of any community, whereas the communities with the lowest population/house and yard have the highest number of mature trees and lowest number of immature trees.

TREES	Community	Immature	Mature
	Indulkana	59	31
	Amata	93	34
	Aparawatatja	15	64
	Pukatja	30	217

Thus the notion that higher populations have an adverse affect on young planting systems is hard to support. Perhaps the car population is more critical in determining plant survival.

(vi) Fire Areas

141 (or 1.6/ house-yard) fire areas that have been used recently were noted. Only 16 houses (17%) had no obvious fire areas. 49% (44) of houses had more than one fire area. Often associated with these fires are windbreaks, bedding and cooking utensils.

As this information was collected through a range of seasons, recently used fire areas are a good indicator of where living occurs.

4.2.8. Maintenance

Information regarding maintenance obtained at Pukatja only would indicate the following over the last year (1986).

Total calls to houses approx.	60
Total houses attended	25

Work carried out	houses	%
Fabric repairs (walls, doors, locks windows)	18	72
"Essential services" (stoves, sinks)	11	44
Toilet cisterns replaced	8	32
Waste blockages (WC, basin, floor)	8	32
Hot water services	4	16
External works (taps, verandahs)	3	12
Houses with only one item to be repaired	10	40
3 or less items to repair	23	92
More than 3 items to repair	2	8

From this it is important to note that the repair work was done to a large number of houses - not one or two houses consistently failing. It is also important to note that the survey results generally have all been based on information gathered after all the above work was completed.

A summary of field data on houses and yards is given in Tables 4.2.1 and 4.2.2.

4.2.9. Homelands

Given the relatively small number of homelands surveyed - 14 out of about 70 - any detailed analysis of the results (see Table 4.2.2) could be misleading.

Set out below are some preliminary observations which may be confirmed with further survey work.

(i) Population

Of a surveyed population 'known to use' the homeland of 125 people only 23 were residing in homelands during the survey.

(ii) Area of House/Person

The area/person of housing on homelands is double (20 sq m) that of community houses on average. However the corresponding area ranges are wildly divergent.

Sq m/Person	Community	Homeland
Upper Range	21.5	126.0
Lower Range	4.8	2.5

(iii) Walling/Fabric

There appears to be less damage to building fabric; however this is largely due to the majority of building being built of non fibrous sheet material.

(iv) Water

Only 54% of Homelands surveyed had functioning water services. 36% of Homelands had access to hot water.

(v) Waste

57% of Homelands were able to adequately dispose of waste. This figure compares favourably to the community 'average' of 45% for the following reasons:

- (1) Less pressure on space allows the surrounding country to tolerate waste system failures;
- (2) Dry Systems - toilets are more common than flush toilets; they are simpler and fail less;
- (3) Washing facilities are often detached from housing;
- (4) Facilities are generally simpler and less maintenance dependent;
- (5) Facilities are probably used far less than corresponding community facilities.

(vi) Electrical

There is almost no access to electricity on the homelands surveyed. Solar panel systems had all ceased to operate.

(vii) Fire Places

An extremely low number of recently used fireplaces were noted confirming the low resident population noted earlier.

A total of seven fires or .5/homeland were noted compared to 1.6/house in communities.

(viii) Water tanks

Despite the essential nature of water for homeland survival only six homelands (42%) had any local supply tanks within the living area. Of these six tanks, five were functioning well.

This is perhaps another indicator of the limited nature of homeland use, or, to be more accurate, use of the 'built facilities' associated with the country known as the homeland.

TABLE 4.2.1. DATA COLLECTED BY COMMUNITIES

"HOUSE"

	INDULKANA	AMATA	APARAWATATJA	PUKATJA	MIMILI	KALKA/PIPALYATJARA	AVERAGES/TOTALS
Number of houses surveyed	20	11	14	23	11	11	90 Total houses
Total population	192	97	108	179	89	78	743 Total housed
Population/house	9.6	8.8	7.7	7.7	8	8	8.3 People/house
Average house size (sq.M)	80	77	67	86	90	79	79.8 sq.m/house
Average house area/person sq.M)	8.75	7	8.7	12.2	12.9	11.9	10.2 sq.m/person
area/person range (sq.M)	[+ 20 - 5	+ 14 - 3.2	+ 21 - 6	+ 25 - 6	+ 31 - 5.4	+ 18 - 3.5	+ 21.5 - 4.8
<u>TOTAL BEDROOMS</u>	41	30	28	51	23	18	191 Bedrooms Total (or 4 people/bedroom)
Average bedrooms/house	2	2.7	2	2.3	2.1	1.6	2.1 beds/house
<u>WALLING</u>							
Fibrous cement sheet used as percentage of houses	(9) 45%	(5) 45%	(9) 64%	(16) 70%	(4) 36%	(0) 0%	(43) 47% Use fibrous cement
Damaged (of those houses)	(3) 33%	(4) 80%	(7) 77%	(14) 88%	(2) 50%	N/A	(30) 69% of fibrous cement are damaged.
Non - fibrous cement sheet (steel, plywood)	(11) 55%	(6) 55%	(5) 36%	(7) 30%	(7) 64%	(11) 100%	(47) 53% Use other than fibrous cement steel or block.
Damaged	(1) 10%	(0) 0%	(2) 40%	(1) 14%	(2) 28%	(0) 0%	(6) 13% Of non-fibrous cement are damaged.
<u>WINDOWS</u>							
Total number (all houses)	172	88	112	184	86	66	708 Total windows.
Total obviously replaced or repaired (Lexan for glass, frames etc.)	110(64%)	21(23%)	57(51%)	119(65%)	29 (33%)	1 (2%)	337 (47%) Obviously repaired or replaced.
Able to ventilate	134(78%)	83(95%)	59(53%)	101(55%)	68 (79%)	65 (98%)	510 (72%) Able to ventilate.
<u>COLD WATER</u>							
Total installations O.K. i.e. cold water points supply water	42%	72%	65%	70%	58%	57%	60% Cold water installation O.K.
<u>HOT WATER</u>							
Total installation O.K. i.e. hot water points able to supply washing quantity of hot water	21%	70%	64%	45%	31.8%	40%	45% Hot water installation O.K.
<u>WASTE</u>							
Total waste installations working (W.C. waste, floor, shower, basin, tub waste).	31%	59%	50%	35%	51.8%	49%	45% Waste installations O.K.
<u>ELECTRICITY</u>							
Total installation "safe" by visual inspection of boards and fittings.	67%	74%	62%	70%	66.4%	52%	65% Electrical installation O.K.

"YARD"

	INDULKANA	AMATA	APARAWATATJA	PUKATJA	MIMILI	KALKA/PIPALYATJARA	AVERAGES/TOTALS
<u>Surveyed</u>	20	11	14	22	11	11	89
<u>Orientation</u> beneficial in any way to house	(17)85%	(5) 45%	(8) 57%	(15)68%	(2)18%	(2)18%	(49)55%
<u>VERANDAHS</u>							
No verandahs of any sort	(3) 15%	(1) 10%	(10)71%	(12)55%	(1) 9%	(1) 9%	(28)31%
Verandahs to N/W (may benefit house)	(12)70%	(5) 50%	(1) 25%	(3) 30%	(5)50%	(3)30%	(29)47%
Verandahs to S/E (little benefit to house)	(5) 29%	(5) 50%	(3) 75%	(7) 70%	(8)80%	(10)100%	(38)62%
<u>FENCING</u>							
No fences (less than half yard fenced)	(12)60%	0	(6) 42%	(3) 13%	(4)36%	(8)72%	(33)37%
Low fences (not totally enclosing) 1200mm or less	(8) 40%	(11)100%	(8) 58%	(19)87%	(7)64%	(3)28%	(56)63%
<u>OUTSIDE TAPS</u>							
Total number of taps	19	17	16	32	15	14	113 Taps
Number leaking/not working	10 (52%)	3 (17%)	1 (7%)	7(22%)	6 (40%)	1 (7%)	28 (24%)
Total working taps	9	14	15	25	9	13	85 Taps O.K.
<u>TREES</u>							
Total mature trees (5m +)	31	34	64	217	26	2	374 Mature trees.
Total immature trees (-5m)	59	93	15	30	37	64	298 Immature trees.
Houses with : more than 5 [immature or mature trees	7	10	6	17	6	5	51 (57%)
" " 10 " "	5	5	2	7	3	2	24 (27%)
" " 15 " "	0	2	1	6	1	1	11 (12%)
" " 20 " "	0	1	0	4	0	1	6 (7%)
<u>FIRE AREAS</u> usually associated with bedding, wiltja, shade structure.							
Number of fire areas with recent obvious use.	33	15	22	33	26	12	141 (1.6/house)
Houses with no obvious fire areas	3	2	1	5	1	4	16 (17%)
Houses with more than one fire area. (of all houses)	11(55%)	3(27%)	6(42%)	13(59%)	8 (72%)	3 (27%)	44 (49%)
<u>SEPTIC TANKS</u> (includes links to common effluent system)							
Average condition	40%	100%	-*	51%	(54%)*	(80%)	-
<u>WATER TANKS</u>							
Number of tanks	5	5	-*	0	3	0	13

TABLE 4.2.2. A SUMMARY OF FIELD DATA ON HOMELANDS

Note

With the exception of Eagle Bore (with particular houses being separated for the survey) all accommodation and resources of the living area were combined in the statistics below (ie a 'house area' of 230 sq m could in fact be the sum total of three smaller houses in close proximity, constituting the living area).

Number of Homelands surveyed	14 Homelands
Population known to use the Homeland	125 People
Population recorded during survey	23 People
Average house size (sq m)	96 sq m
Average house area/person	20 sq m/person
Range +	12.6
-	2.5
Total bedrooms available	36
Average bedrooms/homeland	2.5

Walling

Fibrous cement sheeting used at percentage of homelands	(3) 21%
Damaged (of those homelands)	(1) 33%
Non-fibrous cement used (steel, block)	(11) 79%
Damaged (of those homelands)	(0) 0%

Windows

Total number (all houses)	100
Number obviously repaired or renovated	1 (1%)
Number able to ventilate	92 (92%)

Cold Water

Total installations OK, ie cold water points, supply water etc.	54%
---	-----

Hot Water

Facilities functioning for the provision of hot water (eg solar unit, chip heaters, pipe-work and taps)	36%
---	-----

Waste

Ability to adequately dispose of soft waste grey water and toilet waste. (eg condition of dry toilets, drains, flush toilets and septic tanks)	57%
--	-----

Electrical

Total installations 'safe' by visual inspection of supply boards and fittings (Note: only one homeland surveyed had provision for generated 240V power, none of those homelands with solar electric units had power)	7%
--	----

Orientation:

- Beneficial to house or yard	35% of houses
-------------------------------	---------------

Verandahs:

- Total number of verandahs (or an average of 2.6/house)	37
- N-W orientation beneficial to house	45%
- E-S No benefit	55%

Fences:

- No fences	25%
- Low Fences (at least half the property enclosed)	75%

External Taps:

- Total taps (or 1.3/house)	19
taps working OK	17 (90%)

Trees:

- Mature (5 m+)	25
- Immature (5 m-)	85
- Homelands with more than 5 trees	7
" " " 10 "	7
" " " 15 "	3
" " " 20 "	2

Fire places recently used

- (A very low average of .5/homeland compared to community average of 1.6/house)	7 (.5/homeland)
- Homelands with no recently used fire area	7 (50%)
- Homelands with more than 1 fire area	1 (7%)

TABLE 4.2.2 : A SUMMARY OF FIELD DATA ON HOMELANDS (Cont.)

Septic Tanks:

- Many Homelands have dry waste systems with soakage trenches for grey water. Three (21%) of Homelands had septic disposal

Water tanks: (within the immediate surrounding area)

- number of homelands with tanks 6 (42%)
- tanks OK 5 (83%)

A. THE PROVISION OF "HOUSING" - AN IMPROBABLE DREAM ?

Assume the following -

* Population Main communities 1600
 Mobile total population 2500
 communities & homelands

* Existing "erected houses" (as opposed to wiltjas) 164

Assumed non serviced housing 30% 50

Serviced houses 114

Services in poor repair 30% 34

Existing serviced houses (operational) 70

* Maximum achievable improved health with minimum social traditional disruption will occur through provision and use of hot and cold water supply. Thus any "house" needs to be serviced with at least hot and cold water. In fact, it could be argued the only health benefit of housing is access to water supply.

* Maximum number of people/house around 8 (see "Barker - Housing 1990") for maintenance/numbers/effects.

* All mains services to housing can be provided to the year 1996 (Given the existing state of services, lack of maintenance and current Government attitudes to funding of maintenance, this could be regarded as highly unlikely.)

* Existing services will cope with additional housing. (Again - highly unlikely.)

Then

70 existing houses with 8/house = 560 housed

34 existing houses upgraded to standard and say \$10,000/house = \$340,000

34 Upgraded houses with 8/house = 272 housed

Total housing stock 104 Housed 832

Capital expenditure upgrading \$340,000

On going maintenance. Assume all houses 5 years old. (Barker - "Housing 1990" - housing maintenance/year).

Each house 1986 \$4,000 (5 years old)

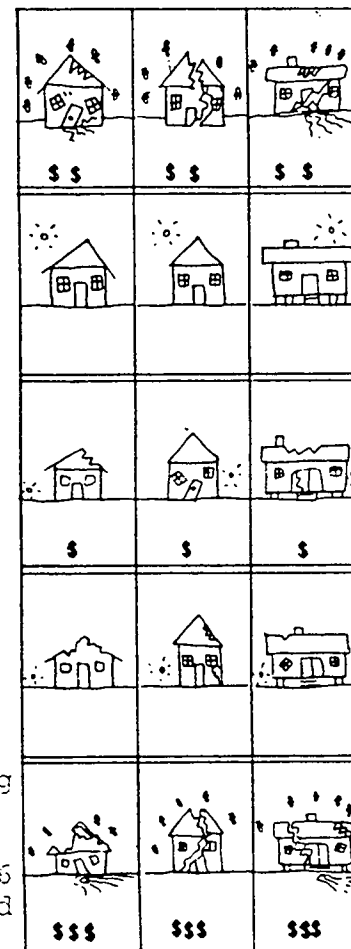
Each house by 1991 \$6,000 (10 years old)

1986 - 1991 \$416,000 / annum

1991 - 1996 \$624,000 / annum

(At 8% inflation/indexing these figures would rise considerably) Having housed 832 (say 850) of the population let us assume we aim at "housing" 2000 of the population on communities or homelands over 5 years by 1991.

Population to be housed 1150
 8/house - total houses say 145
 say providing 30 houses/year over 5 years will house the remaining population.



Cost/house 1986 - (assuming design includes water services and low maintenance construction traditional house) \$60,000

	Capital Cost	Maintenance (not indexed annually)
Year 1 1986 30 houses	\$1.8 M.	-
Year 2 1987 30 houses + 8% inf.	\$1.9 M.	30 x \$2,000 = \$60,000
Year 3 1988 30 houses + 8% inf.	\$2.0 M	60 x \$2,000 = \$120,000
Year 4 1989 30 houses + 8% inf.	\$2.2 M.	90 x \$3,000 = \$270,000
Year 5 1990 30 houses + 8% inf.	\$2.4 M.	120 x \$3,000 = \$360,000
Year 6 - 10	-	150 x \$5,000 = \$750,000

X Total Capital Expenditure
 (including initial renovation over 5 years) = \$9.6 M.

X Total Annual Housing maintenance
 1986 - 1991 approx. \$578,000
 1991 - 1996 approx. \$1.1 M.

? Questions
 Can Governments be expected to contribute this amount of capital and on-going maintenance given current general economic trends?
 Assuming the funds were available are the existing Government agencies able to cope with the extent of this work?
 Where will infrastructure money (power, water, waste, health etc.) fit into this priority for funds?
 Could communities face the burden of money paying for housing maintenance if capital money only was available?
 (1986-1991 - say \$300/man woman & child/annum.
 1991-1996 - say \$550/man woman & child/annum.)
 After what period of no maintenance would a house still be regarded as an asset or as "housing" 8 people?

B. ALTERNATIVE HOUSING / LIVING MODELS

1. Alternatives to "traditional housing solutions" must be explored with Anangu, as talk of providing traditionally accepted housing is simply not feasible given that the above assumptions are proved by the Review.

2. Any housing model should;

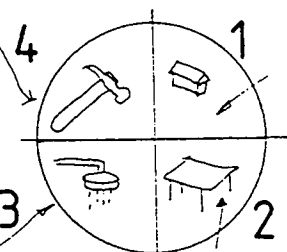
- A) decrease not increase health hazards.
- B) address the problem of ongoing maintenance.
- C) distinguish between the community/homeland choice.
- D) financially recognise the essential nature of water services to health.

1

COMMUNITY MODEL

3 years continuous maintenance/training programme

services
shower
toilets (water & pit)
laundry
kitchen sink
disposal



enclosed structure (rooms) [traditional total housing solution]

Open covered areas. (attached pegolas, wiltjas, verandah roofs, landscape)

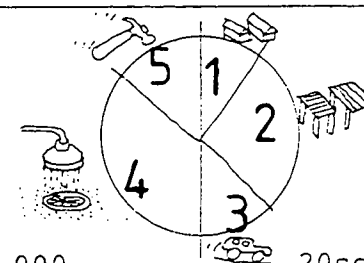
TOTAL \$60,000

- | | | | |
|----|--------------------|---|---|
| 1. | \$15,000 | = | 30sq.m. of enclosed space* |
| 2. | \$15,000 | = | 90sq.m. of covered space |
| 3. | \$15,000 | = | low maintenance shower, 2 x toilets (flush and pit or 2 pit) tubs, kitchen sink, solar HWS.S. waste disposal. |
| 4. | \$15,000 x 3 years | | \$5,000/A routine maintenance training for use of house self maintenance "improvements" furniture, fittings. |

*(Note: 1/4 of budget spent on traditional "housing" component)

2

HOMELAND MODEL



TOTAL BUDGET
\$60,000

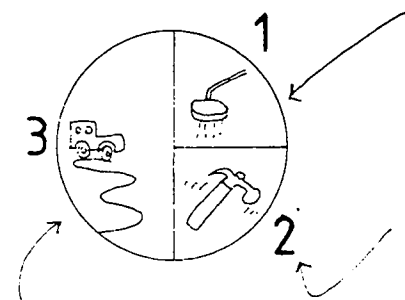
- | | | |
|----|----------|---|
| 1. | \$10,000 | 20sq.m. enclosed space |
| 2. | \$10,000 | 60sq.m. covered space. |
| 3. | \$10,000 | Transport component may be coupled with other families/groups. Includes vehicle maintenance. |
| 4. | \$20,000 | Services. Low maintenance. hand water pumps solar H.W.S. store tanks bore maintenance and supply. |
| 5. | \$10,000 | Maintenance over 5 years minimal improvement/ education as with community house. |

(Note: 1/6 of budget spent on traditional "housing" component.)

3

SERVICES ONLY MODEL

Services water, washing, laundry, kitchen.



3 years maintenance training programmes.

Vehicle/trailer/ custom design (no fuel - 1 year maintenance training programme.)

- | | | | |
|----|---------------------------------------|---|---|
| 1. | \$15,000 | services | [2 toilets, shower [tubs, solar HWS, waste disposal |
| 2. | \$15,000 | Maintenance training programme. | |
| 3. | \$30,000 (or \$3,000/A for 10 years.) | Vehicle/trailer and 1 year maintenance programme. | |

C. RESEARCHED CONSTRUCTION & MAINTENANCE MODELS

SHELTER

The three models are projected from actual project costs which have been identified. Some items such as C.D.E.P. labour, community builder labour and incidental materials and machinery use are not included.

HOUSING

1983 Population to be housed = 28
Decision to build 2 permanent block-work houses for \$75,000.
Housing perhaps 8 people.

1984 Extra house added without funding approval.
Housing perhaps an extra 5 people.

1985 All building stops; no work complete.

1985 3 additional houses added again without approval.
Total houses now 6.
Total population to be housed 28.

1986 No houses complete

Total funds to date:	S A A H B	\$185,000
	A D C	\$ 40,000
Estimates of community builders labour	say	\$ 40,000
	Total	\$265,000

Assume buildings 70% complete
Final cost should be approximately \$378,000
Capital cost/person for housing
28 people = \$13,500/person

At this cost an "average house" (population of 8 persons) could be expected to cost \$108,000 and require a construction time of 3 years.

At the above rates to house in serviced blockwork facilities the necessary 1,500 population would involve a capital cost of 1,500 x \$13,500/person = \$20 Million. (This extraordinary cost would not include services such as water, power and waste).

Assuming economies of scale in building and a non linear cost/person increase, the figure could still be conservatively \$10 - 15 Million.

INDIVIDUAL COMMUNITY BASED "HOUSE" CONSTRUCTION
MODEL B.
(from information provided by S.A.A.H.B.)

DEPARTMENTAL ORGANISED HOUSE CONSTRUCTION/MAINTENANCE
(Provision of teacher housing by S.A. Teacher Housing Authority and Aboriginal Works Unit [A W U]).

INDIVIDUAL COMMUNITY BASED - SHELTER CONSTRUCTION
MODEL A.
(from information provided by S A A H B)

1983 Project commenced
Brief - provision of 8 x family shelters
4 x basic shelters
costing: 8 x family shelters \$108,000
4 x basic shelters \$ 24,000
(Nomad type building units - prefabricated, ready for on-site assembly)

1984 Some work commenced; None completed

1985 Construction; Relocate 4 basic shelters to Homelands

1985-86 Provision of power, water and waste facilities to 8 family shelters.

Total funds for S A A H B = \$243,000
Population housed assuming average 8/family shelter
4/basic shelter
Total say = 80
Capital cost per person in shelter = \$3,000
Population in serviced shelter costing \$203,000
8 x 8 persons/shelter = 64
Capital cost/person = \$3,100

Assuming 600 people currently live in existing serviced houses and say 1,500 more are to be provided with serviced Nomad type shelters cost could be assumed to be \$4.6 Million Capital Cost.

Note: Given the extraordinarily long time period for construction of this simple building type, some inflation factor would also have to be considered.

MAINTENANCE

Number of houses / duplex units provided (approx.) 46
Current housing cost range (3 bedroom) \$140,000-\$170,000
(S A T H A 10th. Annual Report)
(This includes site works, garage and furniture)
Repairs and Maintenance 84-85 \$188,000 (S.A.T.H.A. Annual Report)
85-86 \$140,000 (Memo Soong 6-11-86)

Population 43 Principals and teachers
Assume half 22 single
Assume half 21 married with 2 children
Population housed = 106

NOTE: 34 Aboriginal Education Workers are not housed by the S.A.T.H.A.

Taking the lower 1985-86 maintenance figure cost per person/annum for maintenance = \$1320

Assuming all capital costs and service costs were provided given the above model to maintain housing for 2000 Anangu would require 2000 x \$1320 /person
= \$2.64 M/annum

It is important to note the above figures for maintenance do not include any allowance for mains power, water or waste maintenance or supply.

D. HOUSING: FACT & FICTION^x

* The U.P.K. survey work has produced a unique detailed body of information on Anangu housing enabling effective

design and planning work to proceed on the basis of fact not well meaning fiction.

Before commencing any discussion on housing some important concerns should be kept in mind:

1. The provision of housing to all Anangu on the Pitjatjantjara lands is probably beyond the capacity of Governments and agencies.

2. Whilst housing can quickly become the main focus of the Health Review, it should be kept clear that "houses" can provide only a limited range of health hardware resources. The yard, surrounding resources and on-going maintenance must be seen as integral with "housing" and should be given appropriate financial recognition.

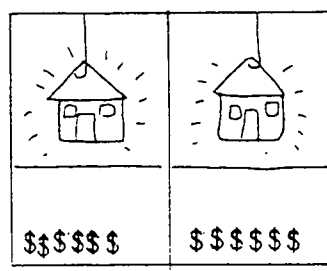
3. Whether discussing homeland or community housing the basic resource questions remain the same.

What follows is an attempt to distinguish between housing fact and fiction.

1 "More houses will improve health"
"Houses" per se will not improve health.

Most people (80%) do not use the main body of the "house" most (80%) of the time. Even the few houses in good repair are not used more, by suburban standards. In fact there is some preliminary evidence to show that the better the surrounding yard is developed (water taps, security, wind protection, shade trees) the better condition the house and health hardware is in. Perhaps maximum health benefit can be achieved by considering areas around the house.

Some of the things houses can provide if well designed and maintained MIGHT enable people to improve their health.



HOUSING



HEALTH



2 "A good Anangu house would be....."
"Theories" of what makes a good or bad "house" often miss the essential point of the house being a provider of health hardware.

Some examples:

1. A mud brick house and use of local materials is better than a blockwork house.
2. Houses with bigger rooms will reduce crowding.
3. Round houses will make Anangu feel at home.
4. Anangu should build their own houses.
5. There must be some revolutionary way to make really cheap, good houses.

Statement 2 has been proven incorrect by the survey work carried out. (See "house" as provider of health hardware").

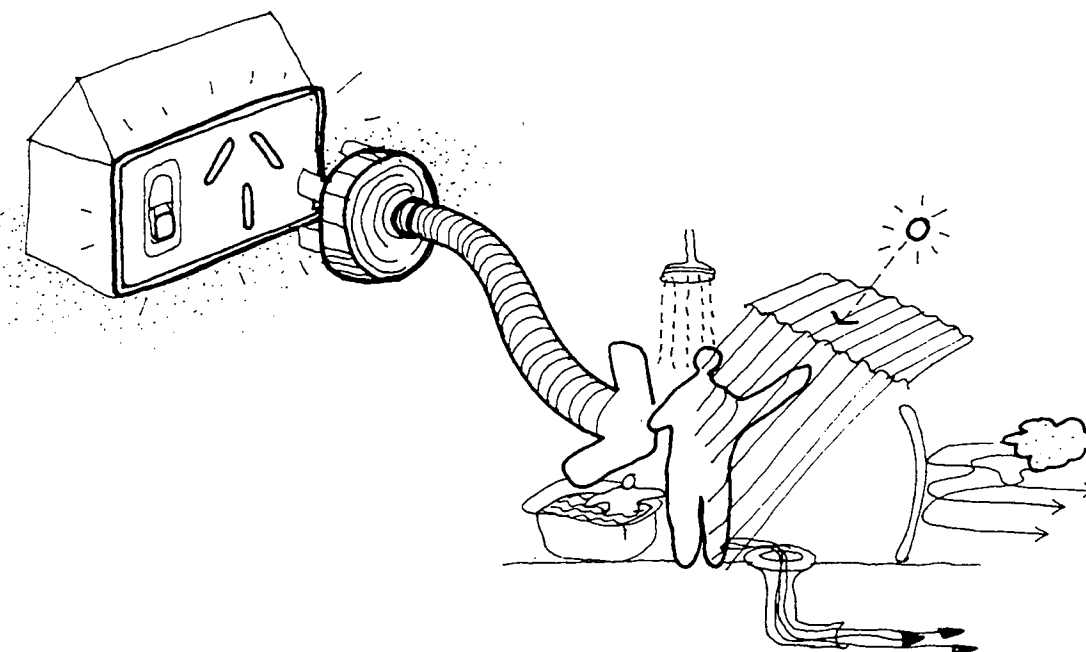
Statement 1, 3 & 5 are all possibly true but so unimportant in providing health hardware they should be considered last.

Statement 4 would bring Anangu in line with the 95% of the world's population who construct their own dwellings but radically out of line with the Australian average of less than 6% of people who build their own dwellings. Again, are there long term health hardware gains?

All these statements look at the thing "house". The house is inherently worthless - what it can provide is not.

As an analogy:

How useful is a power point (house)? In itself it is useless, however it can provide power to a variety of appliances or machines depending on what is important to you; a toaster (washing area), a record player (shade) etc. Some appliances will be more important than others. To worry about the colour or shape or style of the power point (mudbrick or blockwork, round corners or square etc.) is less important, than say, its safety. (water is O K, Waste gets away etc.)



3 "Houses should be designed to Anangu needs."

Often most basic and important needs are not stated. Most people would assume

1. The house was safe.
2. The house had water.
3. The toilet would work.
4. It is possible to maintain the house. etc.

Government agencies and community staff have a responsibility to make Anangu aware of these most important needs and insist that future designs and upgrading considers a simple priority.

1. Safety (structural, particularly wind and electrical)
2. Health (See "House as health hardware provider".)
3. Other needs (Number of rooms, materials, details.)

4 Maintaining the asset (and those health hardware facilities) is as important if not more important than providing the original asset.

A poorly maintained building not only no longer provides health hardware (only 30% of all waste services currently work) but will be a real health hazard. (e.g A non ventilated wet area with a blocked toilet and leaking shower with foul water infiltrating bedrooms on a hot summer's day!)

Communities and funding bodies should recognise the need to tie maintenance money into any building budget. You can build less but keep it working longer. (e.g. Do you buy a \$10,000 car and no petrol or a \$5,000 car and have \$5,000 for petrol and running costs).

5 "Lack of funding by Government is the main reason why people do not have housing".

The Review has found little evidence to support this idea. More housing projects may be started with more funding but it is unlikely that in five years time the total number of habitable houses will have increased.

The main reasons for this are:

- A) Poor timing and administration of funding to communities.
- B) Known design failures continue to be funded and built.
- C) Poor documentation, if any, with which to assess design faults, materials appropriateness, tender prices, construction on site.
- D) Letting of "difficult to perform" contracts to inappropriate builders, to achieve the lowest tender price.
- E) Poor on the ground supervision.
- F) No maintenance considerations in housing funding.
- G) No mains services considerations in housing funding.
- H) No landscape or yard component considered in housing funding.

Until these basic provisions can be implemented, any amount of increased funding will not result in additional useful assets or health hardware facilities.

6 "Housing is not the answer for Anangu".

If "housing" refers to a model of house similar to that of most staff housing on the lands, the statement is probably true. The very model that Anangu aspire to "proper house - teachers/staff house" performs poorly even for staff trained in the use and minor daily maintenance of houses.

- 1) AWU's inspection of Nganampa Health's assets (1986) concluded that about \$2 Million would be required to bring their assets up to standard - a major proportion of that money was to upgrade houses.
- 2) S A Teacher Housing Authority's 10th Annual Report expresses concern about the high construction costs (\$140,000 - \$170,000) and high maintenance costs \$4,000/house/annum, associated with teacher housing. Despite the high costs, teacher dissatisfaction with the housing is a major concern to the Authority.

It is also important to note that very little staff housing on the lands that is less than 5 years old has been constructed on the lands. - Almost all housing is either old housing stock, transportables (Atco type) or prefabricated (teacher housing). This is probably due in part to the inability of agencies and departments to organise efficient on site construction.

If the suggestion about "housing" infers a return to wiltjas or other alternatives two important points must be considered.

- 1) Anangu expectations of a "real house" will be changed slowly and only by providing better staff and Anangu housing models.
- 2) Whatever alternative is proposed should address the priority of providing health hardware facilities.

E. FUNDING / MANAGEMENT

A. FUNDING AND MANAGEMENT OF BUILDING PROJECTS

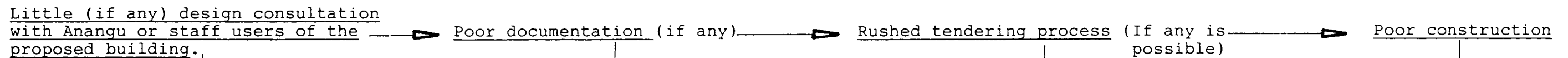
Funding bodies, through the timing of funds, have a direct effect on the quality of assets produced.

Pressure on communities and their advisors (be it real or imagined) to commit funds made available at the last minute usually leads to one of the following responses.

1. The local builder is engaged to build "something" with no documentation, no adequate costing, and no checking of details for known failure points. OR
2. "Off the shelf" prefabricated buildings are ordered over the phone, with no thought of cost, availability of services, or extras to the basic contract etc. (amenity block, house, homeland shed etc.)

Generally "late" funding produces the following results:

LATE FUNDING



Therefore: No involvement of the community in the process of how to get things made.

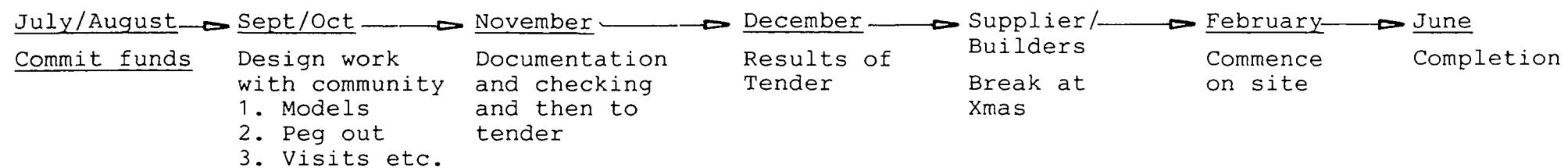
Therefore:
 a) Impossible to compare tender prices, accepting of lowest tender - builder cannot complete work.
 b) Will almost certainly lead to cost extras, on site mistakes and a job which is difficult to supervise.

Therefore:
 a) No screening of tenderers for past performance, current commitments, suitability to the scale of project.
 b) Project goes out to tender at the least competitive time due to other funding arrangements being similar towards the end of the financial year.

Therefore: Community time and effort is then spent trying to resolve a building project gone wrong. Future funding is then delayed until original project is "properly completed"

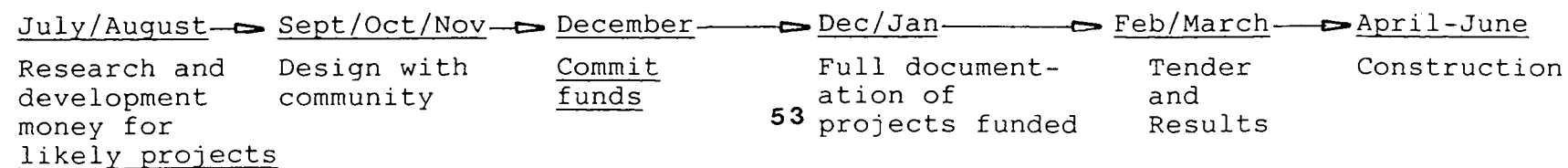
SCHEDULE 1

Two acceptable funding timetables are shown below.



2

OR FOR SMALLER PROJECTS



F. CONSULTATION

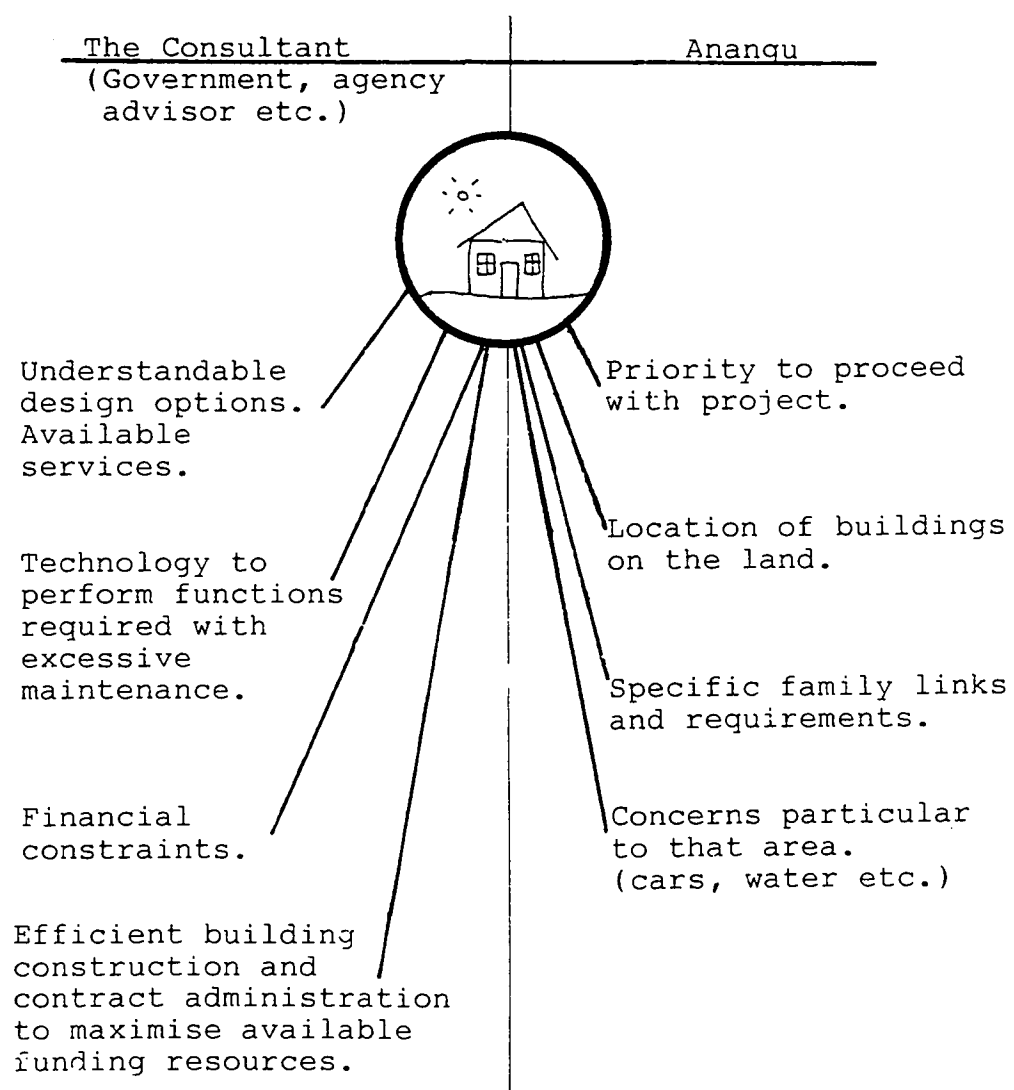
C. CONSULTATION IN THE BUILDING PROCESS

While ever resources are being provided for Anangu by Governments, agencies or staff, consultation about the nature and priority of those resources will be essential.

One of the most important forms of training can occur through the consulting process where Anangu are given some understanding of, and means to affect change in, the process of making things.

The process should consider the following:

- 1 Responsibilities in the consulting process. The diagram below gives a basic division of who is responsible for what information.

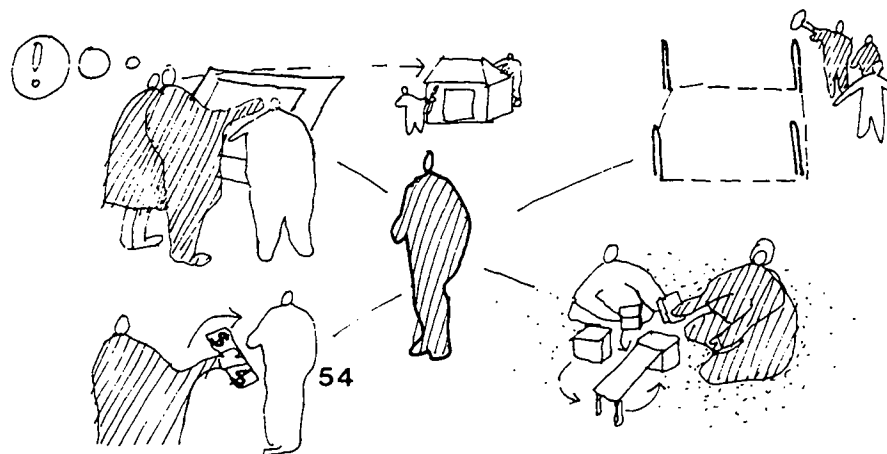


- 2 Active participation in the process. This can be encouraged in many small ways and over time, as people become more familiar with the process of making things, can be increased. (The opposite to active participation is requiring Anangu to give affirmative answers to a list of prepared questions.

Examples

- a) Working models of buildings which Anangu can change/vary.
- b) Families/health committees etc. physically going and pegging out the proposed building with hammers and star pickets.
- c) Choosing final colours, finishes and fittings with guidance about advantages and disadvantages of various choices from the Consultant.
- d) Creating opportunities within the building process to encourage, but not demand, local Anangu input. Murals painted by local artists be costed into building budget fencing, landscape and stone work be available to local labour.
- e) Involving Anangu in "formal" site inspections during construction to relate work on the ground to the original model and drawings of work.
- f) Community members (family/health/store committee) to "handover" progress payment to builder.

These are just some examples of actively involving communities in the design and building process. In the long term communities would begin to demand adequate information and control of the process without necessarily physically building their own dwellings/buildings.



- 3 Time: The time for adequate consultation will only ever be available if:

- a) The community is prepared for the consultation. - They must have the time, and all people important to any decisions are able to be involved.
- b) The consulting person has time on the ground with communities. This has to be acknowledged as being important by funding agencies.

4. Community staff with good local knowledge assist where possible with personal contacts and/or language skills.

5. Implementation: Anangu are only consulted in detail when implementation of a project is assured. Both the community and consultant will lose patience and credibility discussing projects which due to changes in politics or funding do not eventuate. (see section on "Funding and Management") The "flow" of the project from talking to designs to building is important in gaining community understanding of the building process.

Consultation Checklist

In any recently completed building project, did the following occur?

1. Was the community informed of how the design/construction process would work?
2. What information was presented to the community (or members) for consideration or discussion? (Drawings, models, looking at existing project etc.)
3. What possible inputs did the community make in the process?
4. How were people involved in the building process? (site visits, peg out, payments to builders.)
5. Did the relevant funding body assist in the process? - How?
6. What proportion of the project budget was spent on consultation with the community?

G. BUILDING PROCESS

D. THE BUILDING PROCESS

For the health hardware facilities to be efficiently produced the building process will have to be improved. Some possible areas for consideration are listed below:

1

The Building Contractor

- a) Use selective tender only i.e. Contractors with previous good "track records" both in building and community relations.
- b) Contractors must be appropriate to the projects. (small contractors for smaller projects etc.)
- c) Recognise that most "builders" will run projects with sub-contract teams. Try and establish from past work who is the on-site foreman and will there be constant on-site supervision by the builder?
- d) In addition to the technical building requirements, part of any agreement with the builder should clearly state:
 - i. What is available for their use on the site (power? water? machinery?)
 - ii. What accommodation arrangements exist? (site with power, caravan etc.)
 - iii. Who to contact when entering the community or arranging for sub-contractors to visit. (e.g. community advisor's name and phone number.)
 - iv. A brief "orientation" course of the community will be a mandatory requirement for all workers on the site.
 - v. A simple map or plan of areas for material storage, concrete mixing, building water etc., if any of these are considered critical or disruptive.
 - vi. A costed schedule of work will be required for consideration of the tender.

2

The Contract

Any contract should include:

- a) Contract amount and clear documentation and specification about the exact extent of all works.
- b) A Schedule indicating payments to the builder.
- c) A Retention Fund: that is at each progress payment some amount (say 5%) is deducted and held until the end of the job.
- d) A Defects Period (of at least 3 but preferably 6 months) during which, half of the retention fund will be held by the community to cover building defects. - This fund will not cover damage or ongoing maintenance.
- e) A time period for construction agreed with the contractor and a damages amount for non-completion on time.
- f) Insurances
- g) Commencement and proposed completion dates.
- h) Who has authority to alter the contract drawings and make changes to the project?
- i) Who is supervising the work and issuing payments to the builder?

There are many other important clauses and protections that may be found in standard contracts such as:

SBW 1 MBF(Aust) & RAIA
Building Works Contract by
Pitjatjantjara Council.

Remember: Contracts alone don't make projects go smoothly - time is far better spent clearly documenting a project and selecting a good builder at the start, not trying to revive a "project in trouble".

3

Supervision

- a) No building project, particularly one in a remote area, can be built well and to budget without adequate supervision. Too often the remote nature of a project is simply an excuse for poor supervision. Progress payments must be linked to supervision of the work.
- b) The costed schedule of work is useful in assessing the value of work completed at any stage of the project.
- c) The minimum supervision stages would be:
 1. Setout of slabs/footings and commencement of concrete pour. Drainage work installed: particularly septic and soakage trenches.
 2. Blockwork or wall framing/ roof framing in place but not sheeted.
 3. Practical completion. That is when the building is ready to be handed over.
 4. One month before the end of the defects period - so that defect work can be carried out.
- d) If on-site supervision is impossible due to unforeseen circumstances (supervisor falls ill etc.) the community should photograph the work, date the photos and send the photos to the supervisor for the issuing of advice to pay the builder.
- e) No on-site instructions or changes should be made by any community member or advisor without first contacting the Supervisor.

4 Co-ordination of Building Work

Great savings of time, money and supervisory expertise could be made by communities and the many and varied Government agencies co-ordinating a number of building projects.

Rather than having three builders building 3 different houses, have one building 3 houses.

This approach would require:

- 1) Communities to sit down with all departments early in the year to determine building projects.
- 2) Determine tender "packages" made up of smaller projects.
- 3) Agree on administration and supervision procedures for each tender package.

5 Assessment of the Completed Project

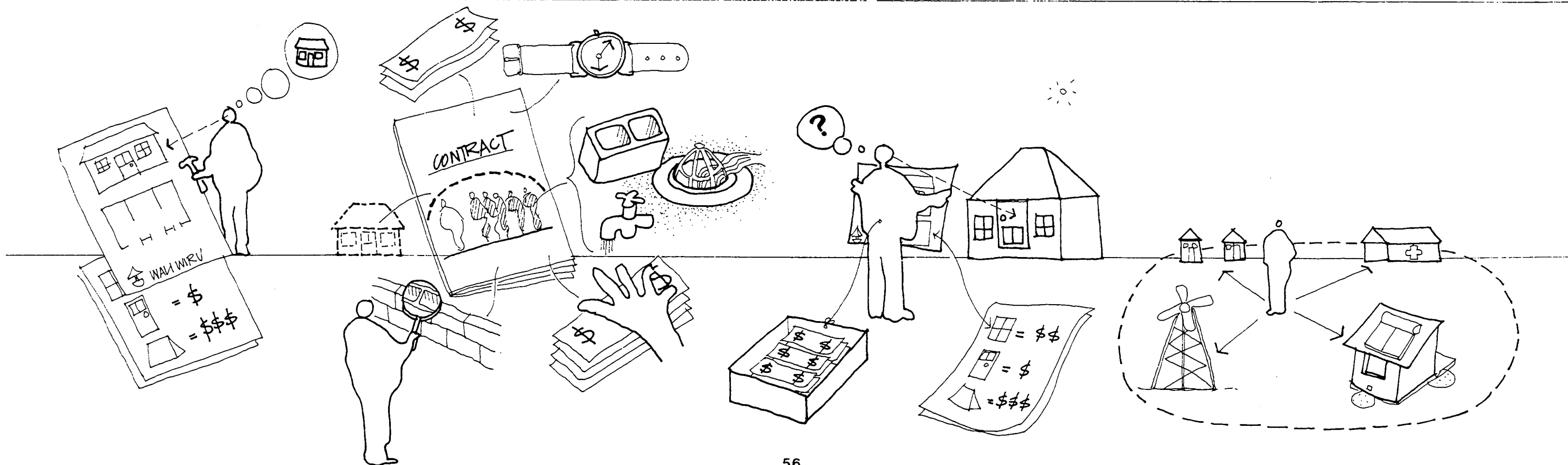
All documents included in the project including a short assessment report of problems etc. should be filed in the community office and with AP for future reference by designers/consultants and supervisors.

CONTRACTOR

CONTRACT

SUPERVISION

CO-ORDINATION



4.4 Essential Services

"A readily available supply of safe water and the sanitary disposal of human wastes are essential, although not the only ingredients of a healthy, productive life". (World Bank Studies on Water Supply and Sanitation - Kalbermatten et al 1982.) In addition to a safe water supply and proper sanitation, the Review considers the availability of nutritious foods and the means to keep foods from spoiling, such as refrigeration, are also essential ingredients for healthy living.

When people live close together, as in the larger communities in AP Lands, proper sanitation is of higher priority than for small family groups living in the Homelands. As the communities grow larger, more complex supply and disposal systems are installed and the communities often have difficulties in maintaining them.

In this section, the Review documents the present state of the essential services, including the problems encountered and possible solutions.

4.4.1. Water Services

In each community there were at least two bores that can be run alternately or together depending on the demands which were generally seasonal. Pumping systems cover all standard types of bore-hole pumps and most types of power supplies.

The question of an alternative power supply being available for bore pumping during power blackouts, when electricity was the only power source for pumping, was considered. After studying figures and reports for the periods of down time for generators in the power house it was observed that it was not necessary for consideration, as power shut downs were generally short and infrequent.

Storage capacities ranged from comfortable to tight depending on pumping capacity, population size and

season. Storage tanks were in reasonable condition considering their age, and roofs and lids were acceptable. Reticulations, all relatively recent, due to APHIP funding, were secure and should provide good service for some time to come.

All communities had overhead filling points to be used for water carting or fire fighting. In the more recent water reticulation projects there can be a number of these in each community. Some of the general problems with overhead filling points are:

- (a) inaccessible - due to more recent constructions hampering access;
- (b) valves that leak or have handles missing;
- (c) too low to permit trucks to manoeuvre underneath;
- (d) no hoses to direct water into the tanks.

These problems can be alleviated by better planning and proper adherence to guidelines and maintenance schedules.

The main problem in the delivery of water appears to be at the taps (either at the house or on stand pipes in the yard). An astonishingly high number of these did not work. In Pipalyatjara, the worst case, only four out of a total of 22 taps on stand pipes worked. The reasons for failure ranged from broken handles due to seized spindles, jammed or faulty washers, sheared spindles or the supply pipe having been blocked off due to uncontrollable flow. This is a good cross-section of the types of failure experienced over the lands.

It appears that it is currently very difficult to monitor water usage, as there are no bores with water meters

installed. Apart from showing when pumps are inoperative or when they are not operating at the designed performance (indicating wear or impending malfunction of the pump or bore), the measurement of accumulated flow would be of great value in planning for new bores when the established system is nearing its full capacity. The establishment of guidelines in water usage in remote areas and particularly in Aboriginal communities is another important area of work that has not been done in the AP Lands or for that matter in SA, although it appears some work is being done by PC in conjunction with the Murdoch University at homelands situations in WA, NT and SA.

Bore pumps require periodical maintenance, such as replacement of pumps, column, rod, pumpheads and motors. This is being done by AWU. The replaced units are being overhauled and then returned to service. This scheduled maintenance has reduced the number of breakdowns and improved the safety of the water supply.

Water Quality

The Review was told that the present SAHC guidelines for drinking water quality are inhibiting the homeland movement and that the communities would like the Review to assess the appropriateness of the present guidelines.

The water supplies of some of the communities have been found to have fluorides and nitrate levels higher than the WHO and Australian guidelines for drinking water quality. A fluoride level above 1.5 mg/L is usually associated with mottling of teeth (dental fluorosis) in children. Tests on water samples taken showed that the fluoride levels were generally below 3 mg/L. Several dental surveys carried out in the AP Lands had confirmed the presence of mottling of

teeth among the children. While dental fluorosis has a negative cosmetic effect it does protect the teeth from caries. There should not be any undue concern about the fluorides levels in the existing water supplies.

Several larger communities have a water nitrates level above 45 mg/L. The literature on the possible health effects of high nitrates in drinking water indicates that a small percentage of infants under six months may develop methaemoglobinaemia, if the nitrates level in drinking water is between 45-90 mg/L, although death from methaemoglobinaemia is very rare. Younger children who are breastfed, older children and adults are not usually affected.

The Review was told that no cases of methaemoglobinaemia had been reported in AP lands and the surrounding areas. Also, breastfeeding of infants is the common practice. Based on the literature review and the information about the local conditions (South Australia 1987), the Review Committee adopted the following recommendation for consideration by the SAHC.

Nitrates Level

1. 0-45 mg/L - Suitable for all purposes by all people.
2. 46-100 mg/L - Suitable for all purposes and people except bottle fed infants under six months of age.
3. Over 100 mg/L - Not suitable for human consumption or the preparation of food.

These values relate to persistent exposure eg three month average. In areas above 45 mg/L, infants who are bottle-fed should be provided with low-nitrate water.

4.4.2. Electrical Services

Electrical supply has reflected a single strategy on one level and fragmented strategies on others. On the level of power generation, standardisation has been the key. This has been mostly successful. It has allowed ease of supply of parts and maintenance.

The scheduled maintenance carried out by the present contractor for AWU on a three monthly basis is providing the much needed continuity in the maintenance of the generating sets. When there is a change of the maintenance officer of the community, the contractor provides the new officer with some historical background on each set. The contractor also fills in the gaps in the specialised expertise often lacking in the community maintenance officers.

This liaison with the contractor is seen as a vital link in the chain of delivery of essential services, and it is recommended that this be retained and enhanced through inservice training for maintenance officers. With the onset of tighter economic control and more stringent budgeting, different strategies should prevail in the selection of generator sets. In the case at Kalka where the load on the generator set was low, a second smaller generator should replace one of the present sets. This should then operate better at the lower loads and, as the feasibility study done by PC shows, should return cheaper running costs as well as more efficient operation. It is hoped that the funding organisation will take up the recommendation made in the feasibility study.

Reticulation reflects the influences of the different parties involved in the decision-making process. The arguments about overhead reticulation or underground reticulation are seen

at their most ridiculous at Fregon where the high voltage supply to the farm area travels underground from the Power House to the creek, then above ground across the creek then underground to the end of its run - through areas of land where there are no dwellings at all. The aesthetic considerations of underground reticulation need to be weighed up against the higher costs of that type of installation. This could have been avoided by the intervention of AP as the regional planning authority. Planning is also important with the siting of new housing etc. Once again, using Fregon as an example, increases of staffing levels led to the demand for more staff housing. Due to the urgency of the matter secondhand demountables were bought. They were all sited in a small area using the same electrical sub main. When they were all connected it was discovered that the load put onto the sub main exceeded its capacity. Major upgrading is required to fix the problem. This could have been avoided if the AP guidelines regarding the use of evaporative coolers instead of refrigerated air conditioners and timer switches on electric hot water services were followed. Secondly and more importantly advice sought from the proper sources would have indicated the maximum load permitted on the sub main and provided alternative sites available for this new housing.

An electrical safety survey was planned to form an integral part of the housing survey. However the cost of this exceeded the budget and it was dropped. Thus there is no detailed information on electrical wiring except when such problems were drawn to the attention of the R and D Team.

As with water consumption there is no way of monitoring fuel flows to the generators or an accumulative measure of power output. These are required

to calculate the cost of power being provided to the user.

At this time only broad figures are possible and only after careful examination and interpretation of the figures available. For example, the powerhouse at Kalka uses approximately 180 litres fuel per day while the powerhouse at Ernabella uses approximately 1000 litres per day. These figures are based on long term measurements and do not help in weekly or daily monitoring.

4.4.3. Soft Waste Disposal Services

Soft waste disposal covers many forms over the lands, from the basic soakage pit and pit toilet to Common Effluent Drain (CED) systems. Each system has been used in a situation according to the demand of circumstances. Design and construction of the septic tank reflects changes in ideas responding to problems experienced in the field. The failure of concrete lids on rectangular tanks constructed on site, due to cars being driven on them, was overcome firstly by constructing the tanks to a height 600 mm above ground level. This did not stop the sides being damaged, cars driving into them or the lids being pushed into the tank. Burying the lids underground creates difficulties in finding them and exacerbates the possibility of the introduction of foreign material. Fibreglass tanks do not stand up to being driven over, the region's most common cause of damage. The introduction of pre-cast cylindrical tanks has overcome most of the problems associated with septic tanks. Being pre-cast, the structural integrity of the tank is guaranteed. Sealing of the manhole is, by its design, assumed to be effective. The immediate difficulties are freight cost and installation. Later, there may be difficulties in finding the tank once installed, because it is concealed

underground. This can be overcome if markers or surface inspection openings are correctly placed.

With the exception of Pukatja all CED systems are recent and a product of the APHIP. They all follow similar planning strategies and basically their operation is successful. As a program of scheduled maintenance is expected this should be initiated immediately with flushing of the drains. This can be started, as the equipment required is already available with AP. The AWU contractors maintain the pumps in the pumping stations. Standardisation of pumps means that minimum numbers of spare pumps are required, while regular servicing is maintained.

At Pukatja the CED system predates influences by AWU or its predecessor. The system described in the Ernabella section is outdated and generally unserviceable and the victim of constant breakdowns. With the grant to up-grade the CED some problems have emerged. These highlight a major problem evident throughout the AP lands. When DAA made the grant for the new CED in March 1986, the major proviso was that all the planning, design and documentation should be completed by the beginning of May and that tenders should close by the end of June. This action by DAA left an extremely short time available for the planning work to be carried out by AWU. The consultation and liaison were at a bare minimum. Consequently the community has not been given sufficient time to become acquainted with the plans and how it will affect them in terms of routing past culturally sensitive areas and the kinds of disruptions that will be experienced. This has led to friction between AWU, the community and AP that could so easily have been avoided if time had been allowed for the preliminary stages to run their full course. All too often Anangu and staff are expected to comply with

unreasonable outside influences and react to situations over which they feel they have no control. This leads to an environment of crisis management that lowers morale in the communities.

4.4.4. Hard Waste Disposal

Hard waste disposal is considered to be an area that should come under the same heading of Environmental Public Health delivery. It requires a major change of habit for Anangu to successfully deal with the problems of hard waste management. Traditionally Anangu were a throw-away society. Traditionally, objects that are discarded, eg bones, wood, flesh, leaves, are all biodegradable. Now most of the objects Anangu use eg tins, paper, plastic and cars need to be properly disposed of. The 44-gallon drum has become recognised as the most used rubbish bin. A severe disadvantage of the 44-gallon drum is that they become very heavy and cannot be lifted easily onto the trailer or back of the truck. Invariably, they are left behind and become the target of dogs looking for food. Vehicles used for collecting rubbish generally fall into the categories of trailers towed behind tractors or Toyotas. The use of a sled for the collection of rubbish would be more appropriate in the communities - this would be low enough to empty bins into, would not suffer from having its wheels removed and would be used only for rubbish collection.

Similar styles of sled bins could be left outside high use areas like stores and meeting places where currently there never seems to be enough rubbish receptacles. All rubbish should be removed to the dump and burnt as often as possible. Only Amata showed any evidence of proper dump management. In other communities, there was poor delineation of the actual dump site with piles of rubbish spread over large areas.

The use of slit trenches would help with the disposal of rubbish and ease re-covering with dirt. Recycling of useable items like iron droppers and mesh is continually being carried out and should be recognised and encouraged. Further collection and recycling of non ferrous metals like radiators, batteries and aluminium would help improve awareness of rubbish management. Major dump earth works could be done using the resources of AP regional services. This should be carried out regularly on a four month or six month program. It would also complement the community program with sharing of resources.

Rubbish management is a community management service. As such, there should be budget items clearly identified and used for this purpose. Workers in this area should have protective clothing to reduce the possibilities of personal trauma and infection. The development of a community "enhancement" program encompassing re-forestation and landscaping as well as rubbish removal would make the job more attractive and foster a positive attitude towards this essential role.

4.4.5. Maintenance

There exists, on the AP Lands, a close relationship between the people's health and the quality of the maintenance systems that are available and functioning on the Lands. There is, however, a general problem of maintenance of essential services particularly in Anangu housing.

The Review is very concerned about capital expenditures on major works on AP Lands without an adequate and clear commitment towards their maintenance. In the housing area major refurbishment becomes necessary because of a lack of ongoing maintenance money. The maintenance money available is often insufficient, unplanned and not

specified for the area of greatest need. The 20% CDEP loading becomes inevitably the back up to cover for crisis situations which can occur almost daily. Yet even this flexibility in the 20% loading has been further eroded by the demand for line item budgeting in its use - which reduces people's options and ability to respond and further exacerbates the situation on the Lands.

Anangu have been ill prepared for the active responsibility in managing Western infrastructures, services and technology. As a result, Anangu and their staff have to struggle to keep the basic services going, often under unfavourable conditions eg remoteness, problems of funding and difficulties of supply.

In 1981 the Federal Government initiated the APHIP which ended in 1986. In the AP Lands, a number of water supply, electrical supply and effluent disposal schemes were implemented. In 1986/87 a total of \$225,620 was granted to AWU for scheduled maintenance. This covered all the areas mentioned. A further \$191,600 was earmarked for breakdown maintenance. This does not include the contributions made through community budgets which are almost impossible to assess without the most careful scrutiny. The money spent on maintenance amounts to almost 10% of the capital cost. The Review notes that most of these systems are relatively new and the maintenance costs are likely to escalate as they get older.

One interesting observation on usage is that the demand for power and water drops by some 40% during the summer period that coincides with the absence of the education department staff and their families. The Review was told that the largest group of beneficiaries of these services are the support staff on the communities.

4.4.6. Planning & Consultation

The Review finds that the problem of communication is probably one of the most important factors affecting the people on the lands. The Review was told that when Telecom was working recently at Pukatja laying the telephone cables they ripped up the water pipe in 15 places. It was then left for the maintenance officer to repair. If information about the position of the water pipes was available to the community and supplied to Telecom, this incident could have been avoided. The most up to date plans of the lay-out of the services available to the communities and AP date back to 1985. These provide very little assistance to the communities and AP in planning and in avoiding service lines if excavation work is being undertaken. Total information access is essential for planning and consultation is the keystone.

The Review's R and D Team gave an example of how DAA recently handed out letters of offer to the Community Councils for the 1987/88 financial year with funding cuts right across the board. Some cuts had been anticipated. There were also some re-arrangements of funding that were entirely unacceptable to Anangu. If there had been proper consultation, these changes could have been made that would be acceptable to all parties.

4.4.7. Co-ordination of Resources

i) Regional

The R and D Team reported that there are currently:

8 graders
4 loaders
7 backhoes
12 tractors
3 ditch-witches
6 tip trucks
7 rollers and
5 bulldozers

on the AP Lands. They represent the core of the heavy equipment owned by AP, the communities or cattle companies. Skilled people are needed to operate them. The Review notes that resources, materials and labour are under-utilised throughout the communities and homelands. If these resources are brought under the management of a regional body such as by AP, the resources currently available can then be used to their fullest potential.

The Review considers that an effective approach to bring about better co-ordination of essential services in AP Lands is to set up a Regional Public Health Unit within NHC under AP. The Public Health Unit will be able to monitor continuously the public health problems in AP Lands and co-ordinate appropriate actions. Support for this unit, particularly on-site training, should be provided by the Health Surveying Services of the SAHC. (See Appendix IV - The Role of the Health Surveying Services.)

ii) Local

At the community level, there appears to be a lack of policy and cohesion in the management of essential services, such as building maintenance, mechanical workshops and rubbish management to ensure that they operate in a co-ordinated fashion with the common goal of maintaining a satisfactory standard of public health facilities in the community. This problem needs to be addressed urgently. What co-operation and co-ordination exist at present are dependent mainly on the goodwill of the staff involved. Given the high staff turnover this is clearly an untenable situation. Each Community Council should, therefore, consider amalgamating these services into one local Public Health Unit under its control.

With regard to funding, it is essential that budget items allocated

for essential services, water, soft waste, hard waste and power should be used for these purposes only and not be subject to re-allocation in the event of short falls in other areas. Furthermore all funds budgeted for the community should be controlled by the community. The Review was told that the present DAA arrangement of directing funding to AWU for maintenance work is causing concern to the communities as they are unaware of the extent of the funding or the areas covered. If community management is to be a meaningful concept, all outside departments and agencies should conduct proper consultation with the communities and the communities should be making the decisions on their maintenance budget.

4.4.8. A Summary of Findings on Individual Communities

(a) Kalka

The water supply at Kalka consists of three bores and a single 195 kL storage tank located on a hill behind the community. All reticulation is 50 mm PVC with risers in 20 mm galvanised iron. The supply uses a push pull system where the same main is used for the supply from the bores and the supplies to the users.

Two bores have electrical helical rotor pumps installed. Both have low outputs and deliver approximately 0.3 L/second each. These are cycled on a weekly basis when the demand is low, however, in the summer, both pumps will be running 24 hr/day.

The third bore has a 6.4 m windmill installed approximately 1.5 km away. This delivers 0.8 L/s at times of peak wind. This is the main source of supply for the community.

During the summer it is not uncommon to experience extended periods of little or no water. In order to prevent this situation the search

for, and drilling of, a larger bore with a supply of at least 1.0 L/s would be necessary. When equipped, an alternative power supply will be advisable unless access to the electrical reticulation is feasible.

Water storage capacity at Kalka is acceptable for the population size with approximately eight days supply based on average usage of 500 L per day for a population of 50. Water quality is acceptable with TDS below 600 mg/L, nitrate below 40 mg/L and fluorides below 1.0 mg/L.

Kalka powerhouse is in reasonable condition but could be improved with sound insulation and pressurisation. There are two 3208 caterpillar generator sets with a capacity of 70 KVA each. Although these sets are supposed to operate efficiently down to 10% full load they have not been successful, with constant problems of cylinder wall glazing due to low loading. PC has done a feasibility study on replacement of one of these sets with a smaller set, with the replaced set being moved to Pipalyatjara. There is only low voltage reticulation throughout Kalka and all of it underground. Connections to buildings are a mixture of hard wiring and extension cords from caravan park style switch boxes. This situation should be rectified.

There is no CED system in Kalka. Extensive use of pit toilets coupled with crude soakage pits and more recently proper septic tanks and soakage drains make up the effluent disposal at Kalka.

(b) Mimili

Water supply at Mimili comes from two bores located on the Mulga plain approximately four to five kilometres to the south of the community.

The total available supply to the town is 3.1 L/s and is delivered by diesel helical rotor pumps in rising

mains. One main is 50 mm PVC and other is 50 mm poly. The second rising main also services a 22.5 kL overhead supply for a homeland.

There are two 122 kL ground storage tanks and one 22.5 kL overhead tank on 12 m stand. The overhead tank supplies the town and is fed by electric transfer pumps of which there are two, thus providing back-up. All tanks are in good condition and lids are secure.

The overhead fill point is situated in an inaccessible position due to the erection of the second ground storage tank.

Reticulation through the town is with 2" PVC and some problems are experienced when repair or extension work is carried out due to incompatibility of the imperial and the newer metric fittings.

While TDS is acceptable for water quality with a mean of 978.3 mg/L for all samples taken, nitrates and fluorides both exceed WHO maximum acceptable levels. Nitrates range to 87 mg/L with a mean of 78.61 mg/L and fluorides range down from 2.2 mg/L with a mean of 2.0 mg/L.

The powerhouse at Mimili is satisfactory although some improvements could be made to sound proofing and pressurisation. There is one 3306 caterpillar generator set with 164 KVA capacity and one 3304 with 91 KVA capacity. By switching from one set to the other, the load can be matched by generating capacity, and the generators properly used. Reticulation is with high voltage and low voltage overhead wires and also with low voltage underground cables in some areas. All dwellings are properly connected.

There is no CED system in Mimili. All dwellings are connected to septic tanks and arbor type soakage systems installed in 1984/85. Although the installations are old there have been no reported problems.

(c) Amata

The water supply at Amata comes primarily from three bores situated approximately one to two kilometres north west of the town centre. The total supply available to the community is 4.0 L/s. Two bores are equipped with a diesel driven helical rotor pump and one of those will soon be electrified.

The main town bore with a delivery rate of 2.1 L/s is a helical rotor pump with an electric motor. It works 12 hours per day every day, while the other two bores are cycled weekly or as required. A fourth bore equipped with a submersible pump in 1986 is dedicated to a re-forestation project in the area between the town and the football ground. This bore could be used to provide town supply in emergency situations.

There are four ground storage tanks and two overhead feed tanks. Electric transfer pumps move water from the storage tanks to the feed tanks. Total capacity is 480 kL ground storage and 45 kL overhead. All tanks are sound and properly secured.

Amata has a 100 mm PVC ring main recently installed to replace the previous 30 mm galvanised ring main that had reached the end of its useful life.

Water quality at Amata is fair with TDS ranging between 510 mg/L to 1200 mg/L. NO3 up to 49 mg/L marginally in excess of WHO maximum acceptable limit of 45 mg/L and fluoride acceptable at below 1.1 mg/L.

The powerhouse at Amata is in very bad condition. Its deterioration was halted in about 1984 with the arrival of the present maintenance officer. However the problem of the powerhouse still needs to be addressed. Dust control is a problem and housekeeping is very difficult.

There are two 3306 caterpillar generator sets of 164 KVA each.

Manual synchronisation was installed in 1986 and this has increased the flexibility of the system during periods of high demand. Reticulation is a combination of high voltage and low voltage all in overhead-cabling. All connections are acceptable.

The CED system was installed in 1982/83 and since then few problems have been experienced. The pumping station has had some problems with the pump breaking down but regular charge over maintenance has alleviated most of this.

(d) Pipalyatjara

Pipalyatjara is currently using three bores for its town supply with a total available supply of 7.7 L/s. Two bores are approximately four km and 5.2 km away respectively and between them provide 7.4 L/s, the bulk of community requirement. One is equipped with a 21 windmill and the other with a diesel helical rotor pump. There is a recurrent problem with seals in the windmill when the packing box seals blow out in high winds.

The third bore is equipped with an electric helical rotor pump. Its delivery is quite low, 0.3 L/s. Although equipped with a timer for cyclic running it runs 24 hrs a day.

There are three storage tanks, two with 80 kL capacity and one with 195 kL capacity. The latter has leaked since it was installed in 1982. All tanks have roofs and lids but the lids are not lockable, thus allowing unauthorised access.

The reticulation consists of separate pipelines for each rising main which is 50 mm poly. The feed main is 80 mm poly to the main distribution point then 50 mm to all areas. There is one overhead filling point using

50 mm. Since it was installed the development that has taken place around it has rendered it inaccessible for its purpose.

Standpipes are supported either next to buildings or on railway iron posts - some have splash pads. Most standpipes are not in use as they have been rendered inoperative.

Water quality at Pipalyatjara is acceptable with TDS below 800 mg/L, NO3 below 40 mg/L and F below 0.7 mg/L.

In 1984 a new powerhouse was built and housed two 3208 caterpillar generators with a capacity of 70 KVA each. At the end of that year, there was a fire in the powerhouse. One generator set was destroyed and the interior of the powerhouse was badly damaged including the switchboard. The powerhouse was repaired in 1986 but there is still only one generator set. This is potentially a difficult situation if there is a major breakdown. Experience has shown that the maintenance authority is slow to react and the delays to the reconnection of power could be as long as four to five days. The repairs to the powerhouse are incomplete with exposed wires around the base of the switchboard.

Reticulation is a mixture of underground and overhead. There is a high voltage reticulation out to a new area of development initiated by the Education Department. The cost of this development, in excess of \$100,000, far outweighs the benefits it will provide. Connections to dwellings are mixture of hard wiring and extension cords from caravan park style switch boxes. This situation, as in Kalka, reflects the changes in philosophy in planning.

There is no CED system at Pipalyatjara, instead septic tanks and soakage drains are the method of effluent disposal.

(e) Yunyarinyi

Until 1986 the water supply at Yunyarinyi was very tenuous. There was a single bore in an alluvial out flow. Several drilling programs had failed to find any reasonable water in the area of the community. In the 1985 drilling program conducted by PC, two bores were drilled that have since been equipped and form the basis of the new community water supply. The two bores provide a total of 2.8 L/s and both are equipped with electric submersible pumps with control switching located at the water tanks for automatic operation.

The two main storage tanks, both of 45 kL capacity, are on top of 12 m tank stands. So the water is pumped from the bore straight to the overhead tank. The rising mains are in 50 mm PVC. There is also a desalination system incorporated in the water supply system. Water from the bore is taken from one overhead tank passed through the Reverse Osmosis desalination units and the desalinated water is pumped into a third overhead tank of 22.5 kL capacity. The desalination system works on a 90% rejection rate and the rejected water is pumped to the second large overhead tank where it is available for community use. Desalination was used to provide water with acceptable nitrate levels, the reject water is still within the acceptable saline range.

So Yunyarinyi has a dual water reticulation, the desalinated water providing drinking water to one tap in the kitchen. The second reticulation grid provides the rest of the water for the community. All underground reticulation is in 50 mm PVC.

Water quality is generally quite acceptable.

With Salinity between 690 - 730 mg/L, F at 1.3 mg/L and NO3 between 93 - 96 mg/L.

The desalination has been installed to reduce the nitrate level only. There is some doubt about the validity of this strategy given the cost of the installation and the maintenance required. Although it is designed as a low maintenance modular system it has only been in operation for two days since it was commissioned early in 1987. While these may be teething problems, the situation is indicative of the difficulties associated with high technology installations.

The power supply consists of two 3304 naturally aspirated caterpillar generator sets of 62 KVA capacity each. The second set came second hand from Ernabella and is in need of an overhaul. The switching setup means that synchronisation is not possible. This is not a problem yet as the load on the present system has not reached a high enough level. Utilizing new work and some of the old the electrical reticulation is through overhead and underground grids. All the buildings are correctly wired and there are no problems reported.

There is no CED system at Yunyarinyi but there are septic tanks and soakage drain systems which do not cause any problems to the bore field one km away.

(f) Indulkana

Indulkana has been plagued with water supply problems from the beginning. The moment the excision was sited, the development of a bore field has been very fragmented as the responsibility for water supply passed through different departments. Money spent on supplying water to the community through the various stages of development exceeded one and a half million dollars in the 20 years of

its life time. The biggest problem was finding bores that produced water of an acceptable salinity. The second major problem was to guarantee security of supply. When good waters were found they were equipped with electric submersible pumps run by diesel electric generators. The supplies were small and needed mixing with high salinity water to provide an adequate supply of reasonable quality. This became unworkable because the rising main from the highly saline bore field reached the end of its workable life and was constantly springing leaks. Thus the main supply came from the two small producing bores that were of drinking quality. The higher usage meant 24-hour pumping, seven days a week. The strains on the pumping equipment began to tell and breakdowns were frequent and chronic. This resulted in periods of up to seven to ten days at a time where the community had no water. Each ensuing water supply project was devoted to working in a separate part of the system, more bores, more storage tanks, second town reticulation for drinking water only.

In 1986/87 the hydro-geological survey, and consequent drilling program attempted a thorough search for water in the hills to the south of Indulkana. The success of this search will mean that the water supply to the community will be secure and of an acceptable quality.

The current hardware being used in the water supply system is as follows:

There are two bores producing a total of 2.4 L and both are equipped with diesel generator sets powering submersible pumps. Neither bore was cased and therefore cannot take helical rotor pumps. The rising main into town is, in imperial measure, 2" PVC which is prone to fracturing through age. Fittings are hard to get and very expensive.

One main storage tank of 145 kL with a second storage tank of 22.5 kL make up the ground storage. These pump water via electric transfer pumps to the two overhead tanks each 22.5 kL capacity. set at 12 m above ground level. All lids are lockable.

All reticulation through the town is PVC and consists of two separate mains, one for general use, the other for drinking water available through a single tap set 'over the kitchen sink'. This second system may become obsolete.

Furthermore there are four tanks with a total capacity of 535 kL that are not in use, because of the failure of the high saline bore field rising main to the method of use of the current bore field.

TDS at Indulkana ranges from 600-900 mg/L in the current bores and to 2000-4500 mg/L in the saline bore field. Nitrates up to 67 mg/L and fluorides up to 0.5 mg/L are acceptable.

Electrical supply at Indulkana comes from two 3306 caterpillar generators which produce a total of 328 KVA. In 1986 a manual synchroniser was installed, providing a wider range of operation and extending the useful life of the present generating capacity. There are high and low voltage reticulation services which can isolate each half of the town at the flick of a switch. The power house is maintained by the community advisor.

Indulkana's common effluent drain system was completed in 1985/86. All effluent waste is now pumped to an evaporation pond located approximately 2 km to the east of the community. This is a new installation and, so far, no major problems exist.

(g) Kaltjiti

Water at Kaltjiti is currently supplied by two bores with a total output of 3.1 L/s. Until last year (1986) a third bore (3.0 L/s) was also being used. This was shut down after contamination by diesel fuel. The cause is still a source of some speculation, however, it seems probable that it occurred as a result of spillage in the area of the bore head. The 1986/87 PC program has located another bore that can be equipped and put on line for the town supply. Both bores being used have electric helical rotor pumps. They are about 1-1.5 km from the storage tanks, which are about a kilometre distance from the community on the opposite side.

The three main storage tanks are each 290 kL and constructed of ferro-cement. There are minor problems with small leaks apparent since completion of the tanks. The older galvanised iron squatters' tanks are no longer in use. The siting of storage tanks has given rise to comment about inadequate head pressure. Measurements taken in various parts of the community indicate that head pressure is acceptable and better reticulation design could alleviate these problems.

Reticulation throughout the community is effected through 100 mm PVC mains and 50 mm PVC submains. There are several overhead filling points throughout the community.

Water quality analysis shows TDS in the 1400 mg/L range. NO3 up to 52 mg/L and fluorides no higher than 1.4 mg/L.

In 1986 one of the two 3306 caterpillar generators was replaced with a 256 KVA 3408 set which caters for higher loads. This generator is currently only being used approximately three to four months of the year. The powerhouse is built of brick and has large fuel storage

tanks. There is a mixture of underground and overhead high voltage reticulation and underground low voltage reticulation. Some areas are experiencing problems with overloading during the periods of peak load. There is an essential services officer working at Fregon who maintains the power supply, water supply and common effluent, all of which function smoothly.

The common effluent drain system was installed in Kaltjiti in 1984/85. There were some teething problems with the pumping system that have now been alleviated. No major problems currently exist.

(h) Pukatja

Pukatja is the oldest community on the AP lands. It began as a mission in 1936. Development was slow until the 1970s. Since then an extensive drilling program has been carried out with over 10 bores drilled.

There are currently three bores being used for the town supply. One is equipped with an electrical helical rotor pump and two with electric submersible pumps. The total delivery of these pumps is 7.0 L/s, but because of insufficient mains capacity they cannot all be used at one time. In 1983 one other town supply bore was abandoned due to bacteriological contamination. This bore was located downstream about 800 metres from the CED evaporation ponds. Since then there has been no bore development work on the downstream side of town where the risk of contamination is too strong. Even so there is still a bore within 100 m of housing.

The rising mains are in 50 mm and 100 mm PVC with the final section in galvanized iron above ground where the pipe goes up the rocky hill to two 450 kL water tanks. Both tanks are in good condition although there is some minor leaking that has been going on for some time. The tanks

have lids that are properly locked. The reticulation through the town is constructed in a mixture of PVC and poly and seems to be adequate for the job. Reported breakages are usually related to excavation and are rare.

Water quality is acceptable with:

TDS about 600 mg/L.
NO3 about of 25 mg/L.
F about 1.4 mg/L.

Electrical supply at Pukatja is, or rather was, the most sophisticated with an automatic computerised controller synchroniser operating from caterpillar diesel generators. This system is now obsolete, and operates on the manual over-ride due to its inefficient use of the generator sets and constant malfunctions. It is a costly lesson on what not to install in remote areas. Installation aside, the maintenance of the automatic synchroniser and various repairs would have financed a whole new generator set. There are three 3306 and one 3304 caterpillar generator sets, with two operating at a time.

There is a high voltage overhead ring main operating around the whole community with low voltage branches in overhead and underground reticulation and adequate connections to housing. There are some seasonal problems with trees which grow into high voltage wires and require cutting down.

The CED system is a collection of separate individual connections which operate almost independently of each other. Some parts of the town are still not connected onto the CED system and instead, have soakage drains that are either badly made or blocked. Pumping lines are in PVC and poly in 50 mm. Some drain lines are undersized, and the pump switching is incorrectly set. There are seven pumping stations which use submersible pumps and helical rotor pumps. The latter are prone to

constant breakdown due to blockage and damage from exposed motors and pumps where there are no covers. This CED system is the subject of a major upgrading project costing almost half a million dollars. It will involve the removal of all pumping stations except one and the CED is designed as one system for the first time.

The essential service team currently consists of a core of two people, who are constantly dealing with breakdowns rather than regular maintenance.

4.5 Nutrition & Community Stores

4.5.1. Summary

Data on Anangu nutrition are available from NHC Medical Reports, (Nganampa Health Council undated and 1987) the South Australian Renal Survey (Aboriginal Health Organisation 1986) and the Review's Nutrition Study (Lee, Bryce and Ward 1987).

The major problems in nutrition are:

- ° weaning and growth failure in infancy
- ° adult diseases of 'urbanisation' - obesity, hyperlipidaemia, hypertension, diabetes mellitus and cardio-vascular diseases.

The Review has found that community stores provided the majority of food stuffs consumed by Anangu. Store foods provided 30% of recommended complex carbohydrate, 25% of recommended fibre, more than four times the recommended sugar and three times the recommended fat intake.

The Review has documented the multiple and complex problems involved in the management of stores. Management, of store and community, is seen as essential for the proper functioning of stores. A regional store policy, developed by AWS, is seen as essential in order to standardise management practice as well as develop nutritional policy within the stores. Recommendations are made for a standard range of nutritious food products to be stocked by all stores. Principles for nutrition education programmes are outlined.

4.5.2. The Review's Nutrition Study

Introduction and methods

Nutrition is one important factor of environmental health which is incriminated in the aetiology of many diseases affecting Aboriginal communities.

As traditional hunter-gatherers Pitjantjatjara people were physically active and ate a nutrient dense diet which was relatively low in energy (Brand et al 1983). Evidence suggests they were slim, well nourished and physically fit people (O'Dea 1984).

Sedentary settlement life and its associated energy dense, nutrient poor diet has led to problems of malnutrition including under nutrition, particularly amongst the under five year old children (Gracey et al 1983) and obesity amongst the adults (which is a mediating factor for non-insulin dependent diabetes mellitus), hypertension and cardiovascular disease (Bastian 1979).

Since the 1970s these diseases have been rife in Anangu communities and represent a tremendous cost to the individuals and families involved, the community as a whole, the health service and the funding agencies.

The aim of the Review's nutrition study was to briefly determine and describe factors influencing the current intake of nutrients and compare these with the level recommended, to suggest ways of interpreting results to communities and to recommend resources to improve nutrition and nutrition education in these communities. Methods which could be useful to NHC in monitoring factors influencing nutritional intake and evaluating nutrition education programmes are also described.

There are many methodological problems inherent in any dietary studies of Aboriginal communities (Rutishauser 1985).

Analysis of store turnover data was chosen as a method to reflect the important role of the store in influencing nutrition in these communities. Store turnover data were meticulously collected and used

to indicate gross nutrients available for consumption at each community studied. Sales patterns for at least six months were determined from ordering and delivery systems.

Results were validated by a complete recorded intake of one family over a pay period from shopping basket surveys in the store using tape recorders. This method of comparison indicated that a significant correction for wastage of store foods was not required.

Bush foods collected were also monitored during the survey and weighed whenever possible.

Nutrient analysis of foods was calculated using food composition tables (McCance and Widdowson 1985 and Thomas and Corden 1977).

The Study Team also collected information by observation and from informal discussions with Anangu health staff, store workers and managers.

4.5.3. Results

A summary of review of stores at Pipalyatjara, Wingelinna, Kanpi and Amata is presented in Table 4.5.1. Although Wingelinna is not within the NHC area, its inclusion was necessary due to the large number of people

from Kalka and Pipalyatjara who buy food supplies there.

There was a wide variation in stores in the area studied - one main difference was in the quality and quantity of fresh foods, especially fruit and vegetables available.

The results of store turnover are represented in Table 4.5.2 and Figure 4.5.1 to illustrate the proportion of total per capita consumption of % energy compared with recommended intake. Store turnover has been supported by weighed intake for one family over a pay period.

These figures indicate that the diet is high in energy, very high in refined carbohydrate, high in fat and salt and very low in dietary fibre. This pattern of dietary intake is consistent with obesity and associated conditions.

The intake of both complex carbohydrate and dietary fibre (provided by bread and cereals especially wholegrain, fruit and vegetables) is inadequate in all communities. Pipalyatjara store provides less than half the complex carbohydrate of Wingelinna and less than a third of Amata.

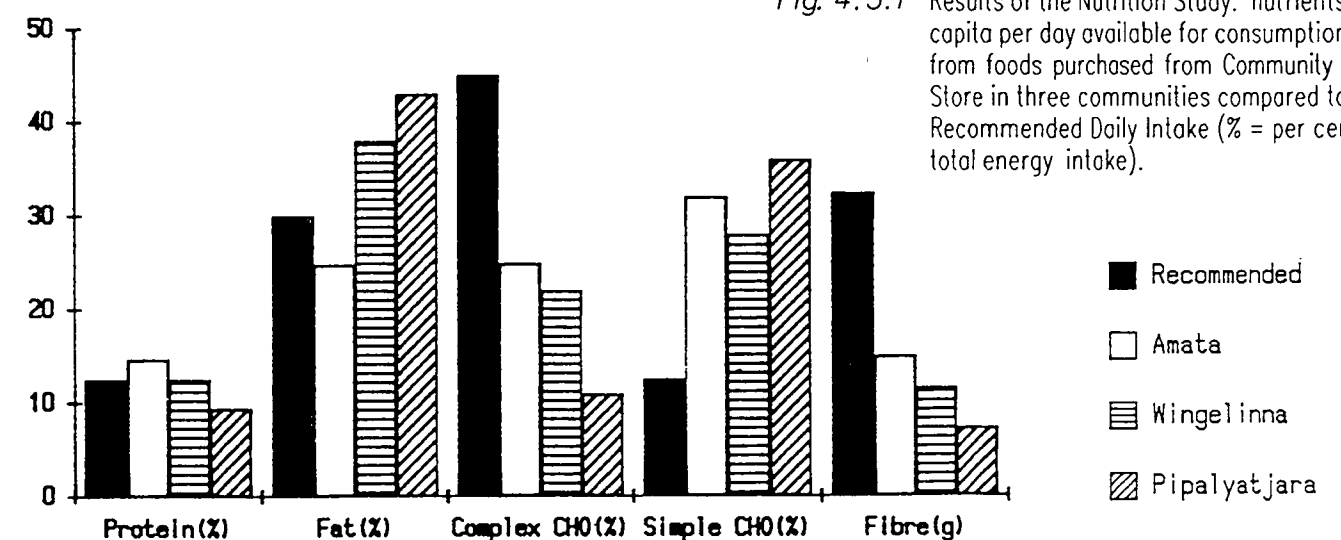


TABLE 4.5.1.: SUMMARY REVIEW OF STORES

	PIPILYATJARA	WINGELINNA	KANYPI	AMATA		PIPILYATJARA	WINGELINNA	KANYPI	AMATA
Population (incl outstn)	approx 120	approx 180	approx 14	approx 260	People's perception of the degree to which the store meets their needs	++ many complaints about the lack of fresh fruit & vegetables & gen variety of goods	++++ Store has good reputation	++++ People are proud of this new Ab. mng venture & are interested & supportive.	++++
No. people reg. using store	approx 90	approx 210	approx 14	approx 300	European staff perception of the degree to which the store meets the needs of the community	nutritional ++ managerial +->+++	nutritional +++ managerial +++	nutritional ++ managerial +++ may be prob with over supply of food to outstation with limited financial resources	nutritional +++ managerial +->++++
Management interested and express concern re: community nutrition.	++	+++	++++	++++	Source of food supply	Adelaide	Perth	Other stores in area	Adelaide
Fresh Fruit and vegetables	those available inadequately displayed	++++	plant & stock	++++ excellent variety cheap.	Transport	Every 6 weeks	Fresh & dry goods delivered alternate weeks	As required	Every week (air) Every fortnight transport
Quality of perishables	+problem with 6 week supply	+++	++	+++	Prices % of Alice Springs Prices.	165%	128%	146%	113%
Variety	++	++++	+	++++					
Refrigeration and store facilities	+++	++++ temporary premises	++++ solar power	+++					
Display	++ 1 fridge display not working	++++	++	+++ very congested					
Ab. Store Workers & Training	Europ. Mng. Ab. Mng in past. Very experienced Ab. store workers	Europ. Mng. Exp. Ab store workers in past	Ab. Mng. New venture Small scale (solar power)	Europ. Mng Ab Mng in past. Current Mng expres concern at lack of store workers					

TABLE 4.5.2.

Nutrients per capita per day available for consumption from foods purchased from Community Store

	RECOMMENDED	AVERAGE AUST INTAKE (a)	PIP.	WINGELINNA	AMATA	COASTAL COMMUNITY (FOR COMPARISON)
Energy (calories)	depends on other factors		2695	2741	4128	3239
Protein (g)	10-15%	@15%	9.4% (63g)	12.5% (86g)	14.7% (151g)	8.4% (71g)
Fat (g)	30%	@40%	43% (129g)	38% (116g)	24.8% (113g)	31.5% (117g)
Total CHO (g)	50-60%	@40%	47.6% (356g)	49.4% (376g)	56.9% (653g)	60% (501g)
Refined CHO (g)	10-15%	@20%	36% (275g)	28% (213g)	32% (371g)	32% (266g)
Complex CHO (g)	40-50%	@20%	10.9% (81g)	22% (163g)	24.9% (282g)	28% (235g)
Fibre (g)	30-35g	@20g	7.3g	11.6g	15g	12.1g
Alcohol	nil	5.6%	N/A	N/A	N/A	N/A

(a) Apparent Consumption of Foodstuffs and Nutrients in Australia 1984-85, Australian Bureau of Statistics

CHO = carbohydrate

% = % of total energy intake

N/A = not available. All communities studied are "dry"

NOTE: Bush food intake was variable and represented up to 30% total energy in one community and less than 10% in another. The analysis of bush food will be compiled and included at a later date.

BRIEF DESCRIPTION OF DIETARY HABITS

Usual food intake closely reflects the financial fluctuation over a pay period. Immediately after "pay day" a typical intake may be:

Morning: weetbix, porridge (oatmeal) with milk and sugar
and/or damper or bread with margarine or butter and jam
tea with sugar

Mid-morning: meat - boiled or stewed (with or without vegetables) - or fried or cooked on coals
bread or damper - maybe with spread
tea with sugar

Mid-afternoon: as morning tea (if store open)

Evening: meat - boiled or stewed (with or without vegetables) or fried or cooked directly on coals
bread or damper - maybe with spread
tea with sugar

Some people eat only twice a day, with "breakfast" in the morning and the main meal late afternoon. Depending on availability, fresh fruit may be purchased. Convenience foods such as tinned meats, and "instant" dinners are also popular. During the latter part of the pay period diet may be limited to damper, bread, tinned meat, available bushfoods and tea with sugar. Bushfoods tend to be gathered or hunted on weekend or holidays. Most foods tend to be shared throughout the extended family. Cooking facilities may range from electric stoves in houses to, more commonly, open fires. Variety of food preparation may be restricted by limited access to cooking vessels. Very little food is actually stored in the house, which generates a great dependency on the store. Among households that have a large number of dogs, it is probable that some of the food available is shared with the dogs.

SUGAR

It is useful to note that of the very high consumption of refined carbohydrate most is derived from added sugar (sucrose) sold in all stores, (as either "raw" or refined sugar). Copious amounts of sugar are added to billy tea which is drunk in large quantities daily.

At Wingelina, the breakdown per capita intake of refined carbohydrate is 213 g per day, 82% (174 g) of which comes from sucrose [nearly 44 (4 g) teaspoons a day) 2.5% from soft drinks and 6% from sweetened fruit juice.

At Pipalyatjara, the total per capita intake of refined carbohydrate is 275 g per day. 75% (207 g) of which comprises 52 (4 g) teaspoons added sugar, 10% from soft drinks (approximately one can of soft drink per person each day) and 1% from sweetened fruit juice.

For Amata, of the total per capita intake of 371 g refined carbohydrate per day, 265 g (71%) comes from added sugar [equal to 66 (4 g) teaspoons] and approximately 28% from sweetened soft drink, (equal to nearly three cans soft drink per person per day!).

There is also an increased variety of commercially prepared foods available, such as Chocolate Bavarian Cake at Amata. These foods have also been responsible for the high intake of refined carbohydrate recorded.

ENERGY

Excess energy intake leads to obesity. It should be noted that energy intake in all communities would appear to exceed individual requirements. The energy provided by food from Amata store is higher than the others. Since Amata is a larger community it may be expected that there is a greater reliance on purchased foods. Certainly meat sales are much higher, contributing to an apparent protein intake twice that of other communities. Meat available at Amata was, however, much leaner than in other communities studied.

FAT

In all communities fat intake seems low when expressed as a percentage of total energy, because the percentage of refined carbohydrate is so high. More than half the total fat intake comes from the consumption of fatty meat. Therefore, the removal of fat from meat prior to cooking would have a significant impact on the total intake of fat. Take-away foods contributed up to 20% fat intake in one community.

VITAMINS AND MINERALS

Our preliminary results indicate low intakes of Vitamin A the B vitamins, especially folic acid and B6, copper, zinc and magnesium. Preliminary results also indicate that the level of salt intake is approximately five times the recommended level. Most of this salt is added to food during preparation or at meal time.

DISCUSSION

These results indicate that it would be nutritionally advantageous for a greater variety of fresh fruit and vegetables, whole-grain breads, cereals, lean meat and less "empty" energy foods such as lollies, chocolates soft drinks, cakes, sweet biscuits and sugar to be consumed. The politics of supply and demand of foods is naturally very complex. In this situation the first step is to ensure that the communities are provided with factual nutrition information on which future action and subsequent changes may be based.

4.5.4. Simple nutrition messages for communities

Information Feedback

The following information can easily be visually interpreted and used by Nganampa Health Workers in discussions with community and women's councils and schools, or used as a display in the stores.

1 cube sugar = 1 teaspoon sugar = 4 g

So the average daily per capita intake of Pipalyatjara of 275 g sugar could be displayed as 55 teaspoons sugar (see Table 4.5.4).

1 can soft drink contains 10 teaspoons sugar and could be displayed as 10 cubes of sugar equivalent.

The fat content of the diet could be similarly expressed in portion size butter or margarine pats or as margarine in plastic containers.

TABLE 4.5.4. AMOUNTS OF SUGAR AND FAT EXPRESSED AS NUMBER OF TEASPOONS

AMOUNT PER PERSON PER DAY	PIPALYATJARA	WINGELINNA	AMATA
TOTAL SUGAR * equivalent to 4g teaspoon) 4g sugar cubes)	69	53	93
ADDED SUGAR equivalent to 4g teaspoon) 4g sugar cubes)	55	44	66
FAT equivalent to 5g teaspoon or 5g butter pats	26	23	23

* This figure is computed from food sources particularly high in refined sugar viz, sugar, soft drinks, cordials, sweetened fruit juice and honey and jam, golden syrup, sweetened flavoured milk, sweet biscuits. (NB more than half of this intake in all communities came from added sugar, notably that added to billy tea)

Anangu should be encouraged to

1. Reduce sugar intake by:

- avoiding sugar
- avoiding ordinary soft drinks
- avoiding sweet biscuits, lollies, cakes and chocolates.

Artificial sweeteners and artificially sweetened foods may be used - eg Equal, Diet Coke.

2. Reduce fat by:

- trimming fat off meat before cooking
- limiting take away foods, such as pies, sausage rolls and pasties
- using low fat cooking methods (eg stewing, BBQ, baking in coals)
- reducing intake of fatty processed meats eg sausages, bacon and fatty tinned meats

3. Eat more fruit and vegetables

4. Eat more bread, damper, rice and cereals (particularly wholegrain varieties)

5. Use less salt

Tasting of sweeteners and low joule sugar-free soft drinks and practical food preparation demonstrations could be arranged. Various media outlets such as videos, books, live TV, radio and Anangu Pitjantjatjara news could also be used to provide nutrition information to the community.

4.5.5. General Comments

There is a general awareness of nutrition in all Anangu communities visited - people know nutritious foods. Fresh fruit and vegetables are popular when good quality items are available. If poor quality fruit and vegetables are not purchased, it should not be assumed that people do not like fruit and vegetables, but rather that they do not appreciate poor quality foods!

Problems faced by store managers are many and varied. Managing stores in remote Aboriginal communities is essentially a difficult and thankless occupation. Problems include lack of supportive networks, high freight costs, distance from supply, supply of poor quality merchandise by city distributors, transport and storage problems of perishable goods affecting quality, and pressure from various persons/groups within the community to provide particular foods.

Although quality of fresh foods, lack of refrigeration and storage facilities are a problem in remote areas, it is important to remember that nutritious alternatives such as dried or tinned fruit, and tinned or frozen vegetables (available in no added sugar, no added salt varieties) are also available. A list of items recommended for inclusion in stores is given in Table 4.5.5. A list of undesirable items has also been provided for consideration. The possibility of changing the sources of store supplies in order to facilitate the purchase of a wider range of nutritionally acceptable foods should also be further investigated.

One obvious problem is people's perceived lack of power to influence stores. Confrontation is avoided, so that if people are unhappy with store stock, prices, or management they tend to shop elsewhere or "make-do". People may simply wait for the situation to change, rather than try

to "cause trouble". Silence or avoidance should not be interpreted as acceptance!

Assumptions about Anangu not wanting to work in stores "because they are lazy" may be due to an unpleasant work environment. Experienced store workers may be given little credibility or responsibility by new store managers who have no understanding of, or experience with Anangu store staff.

Prices in Amata were exceptionally low for a rural store. Wingelinna was also good. Pipalyatjara has the highest prices despite attempts to keep overheads down by six weekly transports.

NHC staff have expressed concern and an interest in nutrition but need nutrition knowledge and education skills so as to be better equipped to provide information to the community. Limited access to nutrition information resources and materials is also a problem.

Further investigation of individual nutritional status within communities would appear to be warranted. Both anthropometric and biochemical screening would be valuable and very useful especially in association with any future nutrition intervention programs.

4.5.6. Conclusions

A nutrition study in three communities and one outstation in AP Lands indicates that nutrients available from stores are grossly inadequate despite the high energy content of the diet.

Foods available for consumption from community stores provided an average of only 30% of recommended intake of complex carbohydrate, only 25% of recommended intake of dietary fibre, more than four times the recommended intake of sugar and three times more fat than the recommended intake.

Intake of most vitamins and minerals are inadequate. Diets are commonly low in A and B vitamins, especially folic acid and B6 and frequently zinc and magnesium. Salt intake is excessive at greater than five times the recommended level.

High energy, low complex carbohydrate, low fibre diets have been incriminated in many "lifestyle" diseases such as heart disease, non-insulin dependent diabetes mellitus and hypertension. In AP areas these diseases already represent a tremendous cost to the community, the health service, funding sources and the families and individuals involved.

Bushfood intake was variable and represented up to 30% of the total energy content of the diet in one community and less than 10% in another.

There is a need for a food and nutrition policy to be developed and implemented for AP Lands which would cover issues such as store foods, nutrition education at school, store, health clinic and general community levels, staff inservice and training, facilitation of bush food collection and continued nutrition surveillance and intervention programmes.

TABLE 4.5.5. GUIDELINES FOR INCLUSION OF FOODS IN STORES ON ABORIGINAL SETTLEMENTS.

These practical guidelines have been compiled to ensure that a variety of nutritious food is available for choice in remote communities.

RECOMMENDED

LEAN MEAT

- fresh (may be frozen)
beef/lamb/mutton/pork/veal - lean cuts and lean mince
- tinned

POULTRY

- chicken, whole or pieces

FISH

- fresh (may be frozen)
- tinned (salmon/tuna/sardines)

EGGS

MILK

- fresh (may be frozen)
whole, low fat and skimmed
- longlife (UHT) whole, low fat and skimmed
- tinned - evaporated
- dried - whole and skimmed

YOGHURT

- whole or skimmed, plain or flavoured

CHEESE

- hard cheese and processed cheddar (does not require refrigeration)
- block
- individual cheese sticks/triangles/slices
- soft cheese, including low fat varieties eg cottage and ricotta

FRUIT

- fresh, at least 2 to 3 varieties sold individually
- tinned, preferably unsweetened eg pie fruit and varieties, canned in own juice
- dried, eg raisins, dried apricots, figs and sultanas

VEGETABLES

- fresh potatoes, onions, pumpkin, carrots, cabbage and others in season
- tinned, all popular varieties
- dried

FATS (including polyunsaturated varieties)

- butter and/or margarine
- cooking oil

CEREALS (including wholegrain varieties)

- flour - plain and self-raising (small packets and large drums)
- rice
- pasta - spaghetti/noodles
- breakfast cereals eg porridge oats, wheat-flake biscuits and muesli (unsweetened/untoasted)
- custard powder
- cornflour

BREAD (including wholegrain varieties)

DRY BISCUITS (including wholegrain savoury varieties)

SPREADS - yeast/vegetable extracts, peanut butter and low joule jams

BEVERAGES

- pure fruit juices, preferably unsweetened varieties (fresh, frozen, UHT, canned)
- vegetable juices (fresh, UHT, canned)
- low joule/diet soft drinks and cordials

MISCELLANEOUS

- tinned baked beans and spaghetti
- nuts
- artificial sweeteners

NOT DESIRABLE

Large varieties and amounts of:

- sweets, lollies, chocolates, soft drinks, cordials, sweet biscuits, tinned puddings, cakes, jams, ice creams, potato chips and snack foods.
- high fat meat products such as sausages, bacon, pies, pasties, fried fish, fried chicken and other fried foods.

SUGGESTIONS FOR TAKE AWAYS

- rotisserie/barbequed chickens
- hamburgers (wholemeal rolls, lean meat pattie & salad)
- wholemeal sandwiches/rolls (with lean meat/chicken/fish/cheese/egg and salad)
- toasted wholemeal sandwiches and jaffles
- wholemeal vegetarian pies, pasties and slices

- home-made vegetable soups
- grilled fish and salad
- seafood kebabs and salad
- hot baked jacket potato with cottage cheese topping and salad
- stir-fried vegetables with brown rice
- prepared salads with no-oil dressings eg coleslaw
- hot tasty snacks eg spaghetti and baked beans on toast, home-made lean beef/lamb casseroles
- wholemeal, vegetarian pizza.

NUTRITIONAL ANECDOTES

In one place NHC was transporting some fruit and vegetables into the community every week. Fruit and vegetables were of high quality and there was good variety. This service was very popular, as fruit and vegetables were sold out within half an hour on most days.

The Review Team was advised not to visit one community by the store manager who indicated that he would be away. However, we did visit the community on the request of Anangu.

In one community, some of its members, particularly the women, complained about the lack of fresh food in the store. Half the population shopped at various times at another store, half an hour away by car, where fruit and vegetables could be purchased together with other groceries. A strong statement in itself.

In another community grapes were "found" in the cool room, already bagged. Unfortunately, they were of poor quality as they had been in the cool room for over four weeks. They would have been more popular if they were fresh.

In another community a European manager refused to get a pumpkin for an Anangu woman as he "could not be bothered" unlocking the store room. On the previous day he had unlocked the same room to provide the Review Team with a loaf of wholemeal bread.

In all three communities European store staff said "Aboriginal people do not like wholemeal bread" and "Aboriginal people do not use fruit and vegetables". The Review team believed these generalisations to be incorrect.

In one store there is a tendency for the store manager to order foods on the basis of personal preferences, and assumptions about Anangu food preferences. Financial considerations rather than nutritional value seem to be more important.

European staff members in one community made serious complaints about the store yet it was one of the best in the area, stocking a wide variety of foods at very reasonable prices including fresh fruit and vegetables.

One community advisor was quoted as saying, "OK, so do your Review - it won't make any difference".

4.5.7. Principles of Nutrition Intervention Strategies in the Communities

The Review considers that major changes in dietary practice and energy expenditure by Anangu will be required to significantly alter illness patterns. It is unlikely however, that small changes in dietary practice will have a significant effect on illness patterns in the short term. Any improvements in health status which follow changes in dietary practice will only be evident long term. The development of an appropriate Food and Nutrition Policy for Anangu communities will facilitate this. This policy should be designed to include strategies for implementing the Dietary Guidelines, nutrition education, store management, food supplies and health promotion etc.

The following principles are important for guiding an effective nutrition education programme:

- Programmes which provide nutrition education will have no effect on overall health status unless changes in behaviour and physical activity patterns occur
- The use of conventional nutrition education methods, ie posters, videos and group sessions, have not been properly evaluated in the Anangu setting. Health promotion strategies within Anangu communities may require a radically new approach that will need to be tested. A consultant nutritionist should be employed to develop these new approaches and carry out their evaluation.
- The aim of a nutrition programme should be to implement the Dietary Guidelines (Better Health Commission 1986) and the

concept of the Healthy Diet Pyramid (Figure 4.5.2), with messages tailored to meet the needs of the local situation:

- i) increase energy expenditure
- ii) reduce total fat intake
- iii) reduce sugar intake
- iv) reduce total energy intake
- v) increase complex carbohydrate intake
- vi) increase fibre intake
- vii) increase vitamin and mineral intake
- viii) reduce salt intake

The messages to be delivered in local programmes should be simple and realistic. They include:

- i) reinforcing breast-feeding for infants;
- ii) increasing levels of daily exercise and activity;
- iii) using lean red meats (beef, pork rabbit and lamb), fish and chicken. Meat should be trimmed of fat and skin removed from poultry;
- iv) avoiding sugar;
- v) using less salt;
- vi) avoiding sweetened soft drinks;
- vii) eating more wholegrain breads, flour and cereals;
- viii) increasing intake of fruit and vegetables;
- ix) eating a greater variety of foods daily

- These nutrition principles are not complicated and should be delivered by all available staff, ie existing health, store, education and community workers.
- Access to qualified nutrition educators to assist with the development of nutrition education programmes should be facilitated and budgeted for.

4.5.8. Store

The store is the pivotal point of the community. If there are problems in the store they reverberate through the community and place extra pressure on other community utilities eg clinics, the office, the maintenance area, the school. Similarly, management at community level can have a major impact on store functioning. In the past, community management has sometimes used store profits to pay for programmes which the community has not been able to finance. Therefore, store profits may have been diverted from subsidising nutritious foods or health hardware goods to bolster other community expenses.

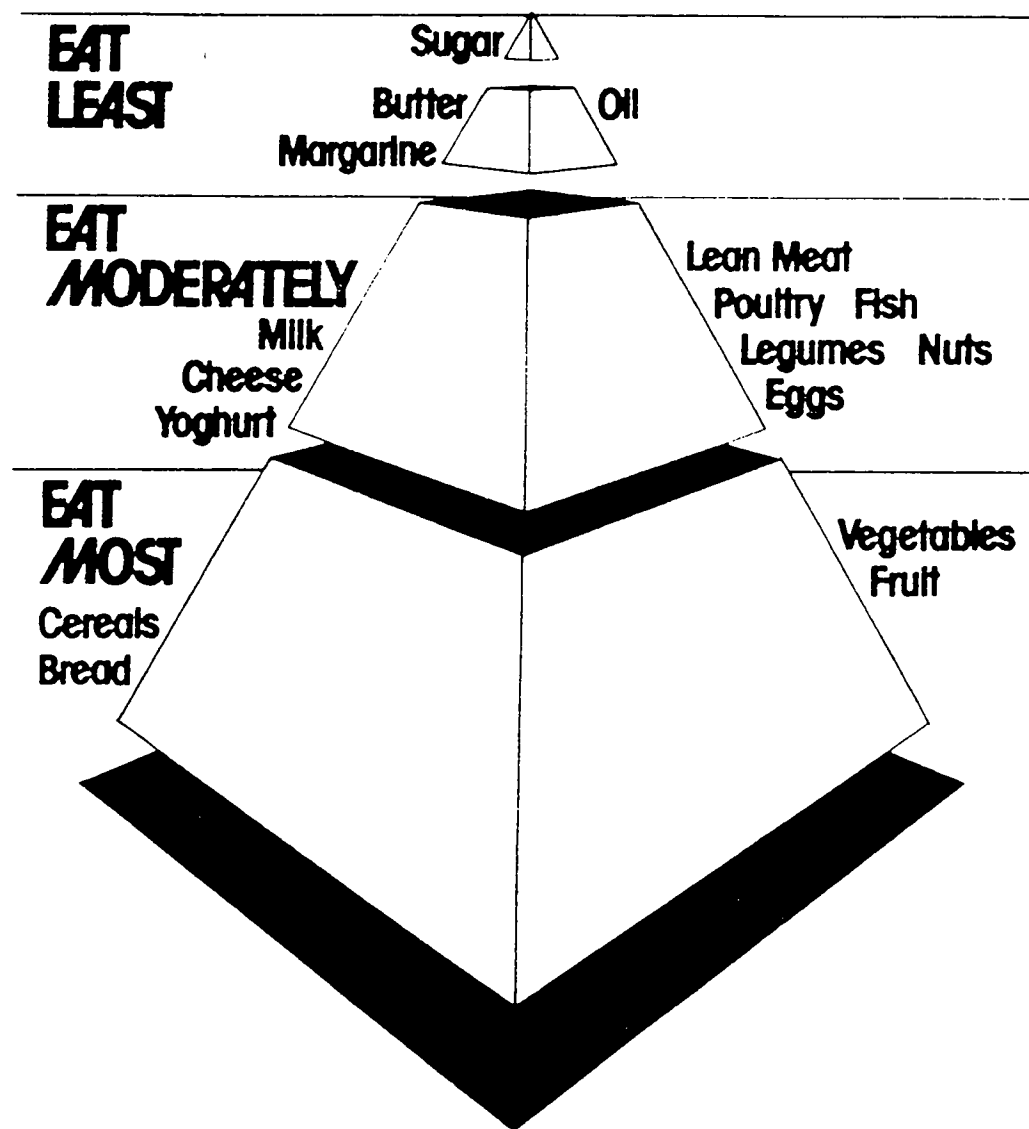
Historically, stores have not been very successful, either as providers of health hardware and nutritious foods or as financial enterprises. The standard of store and food hygiene has also been a concern from time to time, but in recent years it has improved considerably (Fisher and Dalle-nogare 1987).

An effective and viable store could contribute to alleviating certain adverse public health conditions. The store is often the only source of imported foods, clothing, domestic and personal health hardware in an area where high consumption and isolation is the rule.

Stores must be given high priority and support at all levels of management, state, regional and local. It is for this reason that the Review recommends an AP store policy and continued increasing support for the efforts of AWS. This must emphasise the importance of liaison between the store, NHC and the community. The liaison must be both at the regional level, ie between the regional organisations, and at the local level ie community and clinic. More consideration needs to be given to develop mobile store services to Homelands.

Store managers and workers must be aware of the critical role that the store plays in communities. Stores are not just a financial enterprise. They are also a source of nutritious foods, personal and domestic hardware, a medium for the dissemination of information and provide career opportunities for store workers.

THE HEALTHY DIET PYRAMID



Source: The Australian Nutrition Foundation Inc.

4.5.9. Hardware that needs to be available on the Lands

(Not all inclusive)

	Source
weldmesh	20% CDEP
* tarps (pre-winter)	Store (20% CDEP)
big washing basins (with handles)	store
tucker boxes	store
eskies	store
rakes	20% CDEP
shovels	20% CDEP
BBQ Plates - mesh/plate combination (TAFE)	20% CDEP
jerry cans - water	store
portable water tanks	20% CDEP
cooking utensils	store
* wool blanket pre-winter	store
sled bins (rubbish collection/removal)(TAFE)	20% CDEP
drum ovens (TAFE)	20% CDEP
nut & tails & washers	store - 20% CDEP
mops/buckets/plugs	
brooms	
washing up brush	store
scrubbing brush	store
toilet brush	store
detergents/laundry, dishwashing	store
plastic rakes	store - 20% CDEP
plastic bins (domestic inside use)	store
toilet paper	store
disinfectant	store
mattresses	store
sheets/pillows	store
* hoses, (pre-summer)	store - 20% CDEP
hammer	store
screwdriver	store
shifting spanner	store
assorted screws, bolts & nails	store
vegetable seeds	store - 20% CDEP
star pickets	20% CDEP

4.6 Personal Income

(Most of the material presented in this Chapter is based on Jon Willis' work - Willis 1987a).

For Anangu households to take advantage of improved environmental health provisions, ie the environmental health hardware, they would need certain basic household items which the Review calls personal health hardware. A list of these basic items and their cost to a household at estimated current community prices follows in Table 4.6.1. The Review's R and D Team assumed that these items represent additional purchases for Anangu: either they are not currently stocked by stores in sufficient quantities, or they are not purchased in great numbers.

TABLE 4.6.1. : LIST OF MOST BASIC PERSONAL HEALTH HARDWARE

PER HOUSEHOLD/WEEK	COST (a)
shampoo	\$10.00
soap	\$ 5.00
towels	\$ 4.00
soap powder	\$ 6.00
dishwashing detergent	\$ 5.00
brooms, mops, scourers, toilet brush etc	\$10.00
toilet paper	\$ 5.00
billys/utensils, minor yard essential	\$10.00
tucker boxes for food storage	\$ 5.00
TOTAL	\$60.00/wk

(a) Items such as brooms, mops etc have been costed so as to allow for monthly replacement.

Although the list seems modest, it was important for the Review to establish that the items were within the purchasing power of Anangu. Two studies on personal income were made available to the Review: one for Indulkana and the other for the whole of AP Lands (Willis 1987a).

4.6.1. Personal Income & Expenditure at Indulkana

Willis reports that there are a number of methodological problems in quantifying any social indicator in remote Aboriginal communities. The chief of these is establishing the population of a community. The mobility of residents ensures that simple counting can be wildly inaccurate. His population estimate for Indulkana in early 1986 was based on four sources of data: the community CDEP lists for six weeks chosen arbitrarily over a six month period; the community social security records, which indicated social security benefit recipients who received their cheques at Indulkana; the school enrolment record; and an estimate of the number of children under five, based on the population

proportion of 13% represented by this group in the 1985 NT database collection for Indulkana. Once overlaps in CDEP and Social Security lists were eliminated (such as mothers receiving family allowance who also worked), the population was estimated at 399. 257 were adults, either working or receiving social security benefits; 90 were enrolled school children, and 52 were children under five. (It should be noted that this figure differs greatly from the population estimate arrived at by DAA in their 1985 NT database of 265, consisting of 127 "workers", and only 95 people under the age of 15.)

His second methodological problem concerned the identification and investigation of income sources. The available "official" sources are community employment records and social security records. It is possible, however, that Anangu have other unofficial sources of income, such as noodling for opals at the nearby Mintabie opal field, selling artefacts through Maruku Arts and Crafts and community outlets, and from gambling. Such "unofficial sources" are difficult to ascertain.

His third problem was that in the analysis and presentation of data, it was necessary to summarise them. These summarised findings only partially indicated that some people have irregular income and some no income whatsoever. In Table 4.6.2 below, 88 people worked irregularly; that is they received CDEP wages less than four times in the six-weekly periods examined. Almost half of these (37) were only paid once in the periods examined. Seven people on the CDEP list received no income during these periods.

Data for CDEP were collected from Community CDEP records for six weeks chosen arbitrarily over the period December 1985 to June 1986. Data for Social Security payments were estimated over the period, based on community records which were incomplete. The average total weekly income estimated from Social Security payments was \$6,701.64. The mean weekly individual income calculated for those adults working on CDEP or receiving social security benefits was \$76.59. This figure is probably inflated however. Willis maintains that the mean total weekly income for the community calculated from this figure of \$19,683.63 (ie 257 x 76.59) is well above the average calculated for the whole six monthly period. The average total weekly CDEP payout for the entire six months, December to June was \$7,602, although this varied markedly from \$2,363.50 for a week in early January to \$19,393.10 for a week in mid-December. Willis calculates that the mean weekly total income for the period is only \$14,304 (ie, \$7,602 from CDEP

TABLE 4.6.2 : SOURCES OF INCOME

Type of income weekly	MALES		FEMALES		TOTAL	
	No	Mean	No	Mean	No	Mean
	Weekly		Weekly		Weekly	
	\$		\$		\$	
Social Security only	19	95.70	69	70.77	88	76.15
Reg CDEP + S.S.	4	172.19	17	179.67	21	178.25
Irreg CDEP + S.S.	0	0	3	100.84	3	100.84
Reg CDEP only	27	109.55	30	95.49	57	102.15
Irreg CDEP only	49	39.15	39	30.65	88	35.38
Total	99	74.58	158	77.85	257	76.59

Note: Wages for Aboriginal Education Workers and those employed on CM and S wages were not included in Willis' analysis. However, he estimates that there were fewer than four people employed in these capacities at the time of his survey.

and \$6,702 from Social Security). A mean weekly individual income calculated on this basis would therefore be significantly lower than that of Willis' target weeks: only \$56.00 per week.

Collecting data on spending patterns was also fraught with methodological difficulties. The only "official" source in Indulkana was the community store. These figures were problematic for two reasons: firstly, there was no way of separating Anangu spending from non-Anangu spending without detailed observation; secondly, Anangu spent money in places other than their community store. For example, Anangu at Indulkana may also have bought groceries and clothes at other AP communities, such as Marla or Mintabie; they may have bought cars from Alice Springs, Mintabie or Coober Pedy; they may have bought liquor at Marla or Coober Pedy; they may have spent it on gambling or given it to relatives outside the community. There is no reliable way of estimating these disbursements.

The figures in Table 4.6.3 do, however, indicate that the bulk of "official" income is spent locally, via "official" channels. The average total weekly income for the community during the six month period surveyed was \$14,304: the average total weekly expenditure through the community store for the same period was \$13,331. Store managers indicated that the bulk of their custom was Aboriginal. Non-Anangu in the community appeared to obtain groceries from Alice Springs through bush orders or by frequent trips.

TABLE 4.6.3 : AVERAGE WEEKLY EXPENDITURE AT INDULKANA STORE, DECEMBER 1985 TO MAY 1986

AVERAGE	FOOD	CLOTHES/GOODS	FUEL
Monday	1,466.53	116.47	277.12
Tuesday	1,362.33	38.97	451.60
Wednesday	1,293.94	199.88	199.38
Thursday	1,966.37	592.22	469.71
Friday	2,846.83	1,024.28	651.03
Saturday Morning	1,410.06	322.41	499.76
TOTAL	10,346.03	2,394.22	2,548.61

Table 4.6.3 shows that spending in all three areas was concentrated around pay/pension day at the end of the week. By Wednesday, the day before community pay day, and two days before pension day every fortnight, spending had dropped off to less than 40% of the average Friday spending. In light of the fact that Anangu have few food storage facilities, people must have been eating very little by Wednesday. This finding has been supported by the results of the Nutrition Study.

The ability to purchase personal health hardware items in relation to these figures is presented in Tables 4.6.4 and 4.6.5 below. Summarised very simply, with an average weekly household income of \$393.60, and an average weekly household expenditure of \$270.88, the remaining disposable income available to be spent on personal health hardware (as well as building maintenance, rent etc) is \$122.72. Given that the weekly cost of our list of items is \$60, then a household of eight would be left with \$62.72 to meet all their remaining needs. The Review concludes that the average disposable income is clearly inadequate.

TABLE 4.6.4 : DATA ON PERSONAL INCOME AND ABILITY OF ANANGU IN INDULKANA TO PURCHASE HEALTH HARDWARE AND MAINTENANCE EQUIPMENT

Total population at time of data collection	circa 400
Population receiving wage/money of any sort	257
Total income for community	\$19,683.63/wk
Total/head of population/wk	\$49.20
Assume family size of eight for typical house (Review finding), then total weekly household income is	
	<u>\$393.60</u>

TABLE 4.6.5. : DATA ON EXPENDITURES OF PERSONAL INCOME BY ANANGU AT INDULKANA

Food	\$ 25.85 per person per week
Clothes	\$ 5.99 per person per week
Fuel	\$ 2.00 per person per week
Total	\$ 33.86 per person per week
Total Household	\$270.88

4.6.2. Personal Income in all AP Communities

In order to estimate a mean weekly income for all AP communities, Willis used the population figures supplied by DAA in their 1985 NT Database (Table 4.6.6). The Review estimated that some of the population figures were understated by up to 40%.

TABLE 4.6.6. : POPULATION OF AP COMMUNITIES.

LOCATION	<15			15 - 59			>60			TOTAL		
	M	F	T	M	F	T	M	F	T	M	F	T
Mimili	16	18	32	65	62	127	7	8	15	88	86	174
Indulkana	33	62	95	72	79	151	10	9	19	115	150	265
Amata	41	26	67	54	51	105	6	7	13	101	84	185
Kenmore	5	12	17	8	11	19	2	0	2	15	23	38
Angatja	6	6	12	4	5	9	1	1	2	11	12	23
Kaltjiti	49	49	98	60	52	112	19	15	34	128	116	244
Kalka	12	7	19	7	7	14	0	0	0	19	14	33
Pipalyatjara	26	30	56	19	18	37	2	2	4	47	50	97
Pukatja	36	54	90	73	75	148	5	10	15	114	139	253
	224	262	486	362	360	722	52	52	104	638	674	1312

Source : DAA 1985 NT Database

Tables 4.6.7 and 4.6.8 below present data from DAA sources on employment and unemployment benefit recipients in 1985. Their accuracy is certainly not vouched for, and it is likely that they understate the situation as consistently as the population figures in Table 4.6.6. The important point of these tables is that, from a population of 1312, 545 regular wage earners have been identified.

TABLE 4.6.7. : EMPLOYMENT IN AP COMMUNITIES, 1985

Location	Full Time			Part Time			Total		
	M	F	T	M	F	T	M	F	T
Mimili	1	2	3	0	0	0	1	2	3
Indulkana	34	33	67	28	30	58	62	63	125
- Out	2	0	2	0	0	0	2	0	2
Amata	6	1	7	32	26	58	38	27	65
Kenmore	8	11	19	0	0	0	8	11	19
Angatja	1	0	1	4	6	10	5	6	11
- Out	0	2	2	3	0	3	3	2	5
Kaltjiti	62	65	127	0	0	0	62	65	127
Kalka	3	3	6	1	3	4	4	6	10
Pipalyatjara	9	9	18	5	4	9	14	13	27
Pukatja	33	34	67	20	19	39	53	53	106
	159	160	319	93	88	181	252	248	500

Source : DAA 1985 NT database

TABLE 4.6.8. : UNEMPLOYMENT BENEFIT RECIPIENTS IN AP COMMUNITIES, 1985.

	M	F	BOTH
Mimili	7	8	15
Amata	6	7	13
Kenmore	2	0	2
Pukatja	5	10	15
	20	25	45

Source : DAA NT Database

These figures do not include those people on social security benefits other than unemployment benefits who comprise the other major portion of income earners in AP communities. Table 4.6.9 below indicates the number of people on social security benefits on AP Lands in the 1986/87 financial year. Although these figures do not ideally complement the 1985 figures in Tables 4.6.7 and 4.6.8, they do give some indication of the extent of these benefits. The figures supplied by DAA, indicate that apparently there are no social security benefit recipients in Fregon or in the Nyapari homelands area. From the figures supplied, there were 182 social security benefit recipients in 1986/87, the majority of whom were women.

TABLE 4.6.9. : SOCIAL SECURITY BENEFIT RECIPIENTS IN AP COMMUNITIES, 1986-87

Location	M	F	T
Amata	20	31	51
Indulkana	18	31	49
Mimili	7	12	19
Pukatja	26	27	53
Pipalyatjara	4	6	10
	75	107	182

Source : DAA

Table 4.6.10 uses data on CDEP collected by Mark Armstrong of DAA in 1987, with the 1985 population estimates to calculate a mean individual weekly income for AP communities. The average of the CDEP incomes for all AP communities is \$67.18 per person per week.

TABLE 4.6.10. : CDEP PAYMENTS IN AP COMMUNITIES, 1986-7

Location	Annual 1985	p/w Pop	Mean	Individual Weekly Payments
Pipalyatjara/Kalka	351,307	6,755.90	130	51.97
Murrputja/Nyapari	190,504	3,663.54	23	159.28
Amata/Tjurma	884,910	17,017.50	185	91.99
Pukatja/Anilalya	1,095,717	21,071.48	253	83.29
Kenmore	141,237	2,716.10	38	71.48
Kaltjiti/Irintata	791,316	15,217.62	244	62.38
Mimili	430,545	8,279.71	174	47.58
Iwantja	697,589	13,415.17	265	50.66
	4,583,125	88,136.98	1312	av = 67.18

Source : DAA

Assuming that the average weekly income for each social security benefit recipient is around \$76.15, then the total average weekly income for all social security benefit recipients is $182 \times 76.15 = \$13,859.30$. From Table 4.6.10, it appears that the total average weekly income for CDEP recipients is \$88,136.98. When totalled, these two figures indicate a total average Anangu weekly income of \$101,996.28. Divided among DAA's estimated population of 1,312 Anangu, this equals an average weekly income of around \$78. It should be noted that this figure is much higher than the preliminary estimate of weekly personal income of \$49.20 for Indulkana. In fact, if the population is closer to 2,000, then the average weekly income is approximately \$51 per week ($\$101,996.28/2000$).

It is interesting to compare these estimates with the national averages, presented in Table 4.6.11 below. Even using the understated 1985 population figures and consequently inflated personal income estimates, the annual mean money incomes of Anangu over the age of 15 is only 59% of the average for all Australians over the age of 15. The annual mean money income of all Anangu is only 49% of the national average. (If the mean was calculated with the more realistic average weekly income of \$51, then Anangu annual mean money income is only 32% of the national average). This does not even take into account the much higher general dependency ratio of Aboriginal people (Fisk 1985 : 10), nor the higher cost of living in remote communities.

TABLE 4.6.11. : ANNUAL MEAN MONEY INCOMES PER HEAD, CURRENT PRICES 1976, 1981 and 1987

Category	1976	1981	1987
Aborigines aged 15 years +	3310	4530	6070 (a)
All Aborigines	1880	2590	3471 (a)
AP residents aged 15 +	-	-	6421 (b)
All AP Residents	-	-	4042 (b)
All Australians aged 15 +	5020	8170	10948 (a)
All Australian	3660	6180	8181 (a)

Source: 1976 and 1981 Figures: (Fisk, 1985 : 27)

Notes

- (a) Projected, with a 34% CPI Rise. ABS sources indicate that in all cities CPI has risen from 123.1 in 1982 to 164.7 in the March quarter for 1987.
- (b) Assumes an average weekly income of \$77.74 and an AP population of 1,312, where 826 are more than 15 years of age.

4.6.3. Conclusions

Clearly, Anangu are very poor. The Review does not presume to analyse the cause of this poverty or to suggest ways in which it may be alleviated. However, equally clearly, if Anangu are to take advantage of environmental health strategies to measurably improve their health, efforts need to be made to ensure that they have access to the required personal health hardware items listed in Table 4.6.1. In the short term, community stores may choose to subsidise these items at the expense of items that adversely affect health status eg non-nutritious foods like sugar, sweets, soft drinks, cordials and tobacco. However, in the long term, substantial changes need to be made to the structural bases of this poverty.

4.7 Homelands

The re-occupation of traditional Homelands is seen by many Anangu as their hope for the future. Homelands are places where Anangu are in their "correct" relationship to the land and where people are able to control the social environment effectively.

Since the acceptance of the concept of Homelands by government, there have been major misconceptions upon what a Homeland is and what goods and services it should expect or require. There have been contradictory expectations between Anangu and government over what Homelands development would involve. Again, this is where it is valuable to look at what people and government do, not necessarily what they say.

Anangu need to be mobile and active across their lands. This is a fundamental requirement of the Tjukurpa, which can be fostered and sustained with the provision of appropriate services in Homelands.

A critical factor which affects the residency patterns of Homelands is the death of a family member, and the resultant "sorry business". This can result in the abandonment of a Homeland for periods of two years or more. This does not indicate neglect or lack of concern for the Homeland, and this needs to be recognised by government.

There seems to be a maximum distance between a Homeland and a supply centre, (such as a Community), beyond which it becomes unmanageable to maintain a permanent presence upon a Homeland. This seems to be about a 50 to 80 kilometre radius from a service centre. There are some exceptions to this, such as Angatja, Nyapari and Kanypi, but around the community centres of Pukatja, Amata and Mimili this observation would apply.

The main priorities are access into the country, ie roads and water. A carefully constructed plan of development and management is necessary so that the resources available fit the

clients' needs. Regular access to stores and health and education services is also essential. However the provision of services should not exceed the level of development of each of the Homelands.

It is also necessary that an establishment phase for Homelands be formally recognised through appropriate levels of funding and the provision of the necessary resource personnel.

The Review considers the following to be important in regard to environmental health in Homelands:

- The healthy living practices are the same in Homelands as they are in communities;
- The design principles of health hardware in Homelands will often need to be different to the design principles in communities. They should avoid the mistakes and pitfalls associated with development in the larger communities, eg high cost/high maintenance facilities and equipment including flush toilets and septic tanks, diesel water-pumps, large electricity generators, conventional housing, and health and educational facilities;
- The major "health benefit" of Homelands may be that the local living environment is more easily controlled and the health hazards of close living in communities more easily avoided.

Planning of local facilities should include:

- basic shelter;
- potable water supply - adequate amount, with appropriate technology used in storage and distribution;

- excreta disposal - use of appropriate type of disposal system, eg improved VIP latrine, that can be built and maintained by Anangu (Centre for Appropriate Technology-1984);
- refuse disposal - collection and disposal by simple means, eg burning or burial;
- provision of the following services, on-site or on a mobile basis according to size and location: store, school, health, telephone/radio, community advisor;
- development of local resources, involving land management projects, horticulture, animal husbandry, artefact production etc by Anangu;
- education and training programmes with emphasis on homeland needs, eg appropriate technology, Anangu community/education/health workers.
- administration and co-ordination: a homeland development plan can be implemented effectively only if there is a proper administrative arrangement and good co-ordination between the homelands, the larger communities and the regional and State/Commonwealth agencies.

4.8 Education & Training

The Review notes with concern that although most of the agencies delivering services to AP Lands have an education and training role as part of their policy, the education and training needs of Anangu in most areas of everyday living, employment and community management are barely met. There is also a lack of co-ordination and leadership in addressing the various training issues in the communities (McAdam nd).

Under the present training system (the malpa system) Anangu are assigned or attach themselves to resource people in the communities. Through one to one interaction they hope to gain new knowledge and skills and at the same time educate a non-Aboriginal resource person. Often a close relationship is formed and it is not uncommon for Anangu to abandon that particular area of work once the European resource person leaves the area.

An area of conflict under the present system of training is that the resource person can be caught between the demand for training and the demand of accomplishing the task quickly, eg building a house, cleaning out a CED.

Also, there is a general expectation that Anangu, when suitably trained, will be able to manage all the affairs of the communities on AP Lands without the presence of outside resource staff. This would seem simplistic given the complexity and pressure in the management of these communities. It is important, however, that they have good knowledge and understanding of the process involved as well as a sense of control at the higher management level eg policy and decision making. In the homelands, training is vital if it encourages mobility and activity on the lands. Courses in cattle work, ranger training and land management are particularly useful, as well as the more traditionally acceptable ones such as bore maintenance, book-keeping, mechanics

and community management. Therefore, TAFE involvement in homeland communities west of Amata is considered necessary.

The Review notes that an accredited course in teacher education is being implemented and that the NHC is designing an accredited Aboriginal Health Worker Course.

In the planning and delivery of the various education and training courses, there is a need to adopt more flexible and innovative approaches, including bi-cultural and bi-lingual methods, to meet client expectations and achieve course objectives (Steel 1987). The Review endorses the main thrust of the Committee of Review on Aboriginal Employment and Training Programs (Australia 1985) to improve training and employment programs for Aboriginal people.

The Review is aware of Anangu support for a Pitjantjatjara College in the AP Lands, which could be a combination of a secondary school and an adult learning centre. The proposed college could be the centre for training Anangu to become more effective managers and supervisors, teachers, health workers, tradespersons, store keepers and office workers and community self-management could then be a reality.

4.9 Community Health Education & Promotion

Community health education programmes in Aboriginal communities have been outstanding for their failure to alter health status as most programmes require a behavioural change to produce an improvement in health. Simply delivering a health information package provides no guarantee of success. The conventional techniques of workshops, videos, poster-presentation and others have not generally been evaluated in terms of changes in knowledge and behaviour in the Anangu setting. There is a need therefore to reassess the approaches used in health education and promotion programmes in Anangu communities.

The Review itself was a major vehicle for health education and promotion within the communities. The experience of the R and D Team has demonstrated that it requires continuous activity to keep public health on the agenda of communities. Anangu should be able to see the immediate benefits that can be gained eg by repair of a drainage or water system. It is necessary to demonstrate the links between good management of health hardware in the community and the benefits to health.

Clearly, health education and promotion programmes will fail if they require a behavioural change which cannot be adopted because of a lack of the necessary health hardware in communities.

In addition, a health education and promotion proposal should, if possible, provide some evidence to Anangu about how much health will be improved, if the particular behavioural change is adopted. The Review believes that programmes should be based on the principles of healthy living outlined in this Report. The establishment of public health officer positions could provide the focus for continuing health promotion on the Lands. The public health officers, as part of the AP/NHC infrastructure, would be ideally placed to emphasise public health as an issue for Anangu.

Previous attempts at community health education relating to public and environmental health had failed for various reasons, including:

- ° lack of a structural base within the Pitjantjatjara society, eg opinion leaders on environmental health issues;
- ° brief and sporadic visits by health surveyors;
- ° absence of on-going dialogue between the health staff and the Community Councils and management staff.

It is important, therefore, that the proposed Public Health Unit plays a major role in the co-ordination of the various public health services on the Lands as well as the development of health promotion programs.

BIBLIOGRAPHY

- Aboriginal Health Organisation 1987, Renal Survey Report, Adelaide
- Aboriginal Workers Unit 1987, Essential Services Workshop held at Ernabella 2-6 March 1987, SA Department of Housing & Construction and Commonwealth Department of Education
- T. Anderson et al 1985, Planning for Indulkana, A study conducted by BA 3 Planning Students at the SAIT, Mimeo
- Australia 1978, Submission by Dr J. Reser to the House of Representatives Standing Committee on Aboriginal Affairs, Hansard, Canberra
- Australia 1982, Appraisal of the Effectiveness of Aboriginal Public Health Improvement Program, Departments of Aboriginal Affairs and Transport and Construction, Canberra
- Australia 1984, Aboriginal Social Indicators, AGPS, Canberra
- Australia 1985, Report of the Committee of Review of Aboriginal Employment and Training Programs, AGPS, Canberra
- Australia 1985a, Advancing Australian's Health, Commonwealth Department of Health, Canberra.
- Australia 1985b, Departmental Guidelines, Department of Aboriginal Affairs, Canberra
- Australia 1987, The Social and Economic Circumstances of Aboriginal People Living in Homeland Centres or Outstations, and the Development of Policies and Programs to meet their Future Needs, Report of the House of Representatives Standing Committee on Aboriginal Affairs, Government Printers, Canberra
- Australian Bureau of Statistics 1985, Apparent Consumption of Foodstuffs and Nutrients, Australia
- P. Bastian 1979, "Coronary Heart Disease in Tribal Aborigines - the Kimberley Survey" ANZ Journal of Medicine p 284-292
- R.M. Berndt 1977, Aborigines and Changes, AIAS, Canberra
- Better Health Commission 1986, Looking forward to Better Health, Vol 1-3, AGPS, Canberra
- J.C. Brand et al 1983, The Nutritional Composition of Australian Bushfoods 1. Food Technology Australia 35:293-8
- S. Cameron 1986, Aspects of Infectious Diseases, Discussion Paper written for the Environmental and Public Health Review
- Centre for Appropriate Technology 1984, Appropriate Technology in Central Australia, Community College of Central Australia, Alice Springs
- R.A. Cockington 1980, "Growth of Australian Aboriginal Children Related to Social Circumstances", Aust NZ J Med, 10, 199-208
- C. Cocks et al 1978, Report of the Pitjantjatjara Land Rights Working Party of South Australia, Premier's Department, Adelaide
- H.C. Coombs 1977, The Pitjantjatjara Aborigines: A Strategy for Survival Centre for Resource and Environmental Studies, Canberra
- Coopers and Lybrand W.D. Scott 1985, Study into Homelessness and Inadequate Housing, Vol 1, AGPS, Canberra
- T. Davis 1985, Problems and Cost Associated with Electrical Power Supplies in Communities Serviced by the Pitjantjatjara Council, Discussion Paper
- T. Davis 1986, Water Storage, Retriculation and Use - Experience in Communities Serviced by Pitjantjatjara Council, Discussion paper prepared for the Review
- R. Day and J. Dalle-nogare 1987, Survey of Common Effluent Drainage Systems on AP Lands, Discussion Paper
- C. Endean 1987, Anangu Maruku Nguru - Aboriginal Living Areas (Draft), Discussion Paper
- C. Endean 1987a, Environmental Health in relation to Oral Disease and Prevention, Discussion Paper
- R.G. Feachem et al 1983, Sanitation and Disease-Health Aspects of Excreta and Wastewater Management, Published for the World Bank, John Wiley & Sons, NY
- L. Fisher and J. Dalle-nogare 1987, An Analysis of Certain Key Environmental Health Issues as Reported by Health Surveyors during their visits to AP Lands, Discussion Paper written for the Environmental and Public Health Review
- E.K. Fisk, 1985, The Aboriginal Economy in Town and Country, George Allen and Unwin, Sydney
- R. Fleetwood 1986, Pharmaceutical Services to the Communities within the Nganampa Health Area, Paper written for the Environmental and Public Health Review
- B. Foran and B. Walker ed., 1985 The Application of Science and Technology to Aboriginal Development in Central Australia, CSIRO and Centre for Appropriate Technology, Alice Springs
- G.K. Golowyn et al 1982, Investigation of Water Supply and Sewerage facilities at 58 Aboriginal Communities in Western Australia, Public Works Department, Engineering Division, WA
- M. Gracey et al 1983, "The Nutrition of Australian Aboriginal Infants and Young Children," Nutrition Rev 3:133

- P. Hamilton 1972, "Aspects of Interdependence between Aboriginal Social Behaviour and the Spatial and Physical Environment" in Aboriginal Housing, Institute of Architects, Report of a Seminar, Canberra, February 1972
- A. Hamilton 1982, "Child Health and Child Care in a Desert Community 1970-71" in J. Reid ed. Body, Land and Spirits U Queensland P, St Lucia pp 49-71
- G. Handke 1987, A Program for the Diagnosis of Gonorrhoea in the Isolated Aboriginal Settlements, Discussion Paper
- J. Harrison 1987, The Old People's Study: Their situation and needs, draft, Pitjantjatjara Women's Council, Alice Springs
- G. Hart 1986, STDs in South Australian Aboriginal Population, Paper written for the Environmental and Public Health Review, Discussion Paper
- M. Heppel ed 1979, A Black Reality, AIAS, Canberra
- B.S. Hetzel & H.J. Frith 1976, "The Nutrition of Aboriginal in Relation to the Ecosystem of Central Australia", Symposium CSIRO 23-26 Oct 1976 Canberra, CSIRO, Melbourne
- W.M. Hilliard 1968, The People in Between, Hodder and Stoughton
- C.D.J. Holman et al 1986, Health and Disease in the Aboriginal Population of the Kimberley Region of Western Australia 1980-1985, Health Department, WA, Perth
- H.M. Hudson and I.R.H. Rockett 1982, An Environmental and Demographic Analysis of Otitis Media in Rural Australian Aborigines, Research paper No 246, Macquarie U School of Economic and Financial Studies, Sydney
- J. Jans and F.S. Soong 1984, The Middleman in Health and Sickness, presented to the First International Conference on Clinical and Social Aspect of Illness Behaviour, Adelaide, 15-18 August, 1984
- Joint Ministerial Evaluation 1982, A report on the Pitjantjatjara Homelands Health Service Based at Kalka (1978-81), Canberra
- B. Johnston 1987, A.P. and Building Work on the AP Freehold Lands, letter to AP Chairman
- J.M. Kalbermatten et al 1982, Appropriate Sanitation alternatives - A Planning and Design Manual, Published for World Bank by The Johns Hopkins P, Baltimore
- C. Larkin and L. Kropinyeri 1986, Community Management Training Conference 2-5 June 1986, School of Aboriginal Education, TAFE and Aboriginal Workers Unit, Department of Housing & Construction, Adelaide
- M. Last 1985, Advance in Aboriginal Reafforestation and Horticulture in the Last Decade, Discussion Paper
- M. Lee, S. Bryce and N. Ward 1987, Review of Nutrition - Uwankara Palyanyku Kanyintjaku, Nganampa Health Council Inc, Alice Springs
- Y. Lester 1986, Anangu Pitjantjatjaraku and Government Departments, letter, Alice Springs
- E. McAdam Undated, Report of Training and Employment Opportunities for Anangu People in the Far North-West Area of the State of South Australia, Aboriginal Works Unit, DHC, Adelaide
- McCance and Widdowson 1985, The Composition of Foods 4th ed Elsevier/North Holland Biomedical Press, London
- B. Meehan 1982, "Shell Bed to Shell Midden", AJAS 141-161
- S. Meihubers 1986, Dental Hypoplasia in AP Lands, Letter to the Review
- P. Nathan and D.L. Japanangka 1983, Health Business, Heinemann Educational, Australia
- National Health and Medical Research Council 1980, Desirable Quality for Drinking Water in Australia AGPS, Canberra
- Nganampa Health Council Undated, Medical Report 1984, Alice Springs
- Nganampa Health Council 1987, Health Report 1985/86, Alice Springs
- K. O'Dea 1983, "Lifestyle change and Diabetes in Australian Aborigines" Aboriginal Health Project Information Bulletin, 4: 17-21
- K. O'Dea 1984, Marked Improvement in Carbohydrate and Lipid Metabolism in Diabetic Australian Aborigines after Temporary Reversion to Traditional Lifestyle, Diabetes 33:596-603
- N. Petersen and M. Langton eds 1983, Aborigines, Land and Land Rights, AIAS, Canberra
- P. Pholeros 1986, Mutitjulu Community Plan, 1986, Ayers Rock, Mimeo
- P. Pholeros 1986a, The Provision of Housing - an Improbable Dream? Discussion Paper written for the Environmental and Public Health Review
- J. Rakowski 1987, Nutrition Findings and Recommendations, Background paper written for the Environment and Public Health Review
- R.E. Read 1986, Pitjantjatjara Homelands Nitrate and Fluoride in Outstation Groundwater Supplies - Geological Survey, Department of Mines and Energy, Adelaide
- H. Ross 1983, Fringe - Camping Aboriginal's Construing of Housing, Paper prescribed at the 53rd ANZAAS Congress, Perth

- C.D. Rowley 1970, The Destruction of Aboriginal Society - Aboriginal Policy and Practices Vol I, ANU, Canberra
- C.D. Rowley 1971, The Remote Aboriginal: Aboriginal Policy and Practice Vol III, ANU, Canberra
- C.D. Rowley 1986, Recovery: The Politics of Aboriginal Reform, Penguin, Sydney
- Royal Australian College of Ophthalmologists 1986, The National Trachoma and Eye Health program of the Royal Australian College of Ophthalmologists, Sydney.
- I.H.E. Rutishauser 1985, International Food and Nutrition Society Brighton, 706-710
- I.H.E. Rutishauser 1985, International Food and Nutrition Study, Brighton
- M. Schaefer 1981, Intersectoral Coordination and Health in Environmental Management - An Examination of National Experience, WHO, Geneva
- F.S. Soong 1982, "Working in an Aboriginal Community" Australian Nurses' Journal, 13:2: 54-56
- F.S. Soong 1983, "The Role of Aboriginal Health Workers as Cultural Brokers - Some Findings and their Implications", Aust. J. of Soc Issues 18:4: 268-274
- F.S. Soong 1986, Aboriginal Development Issues, Discussion Paper written for the Environmental and Public Health Review
- F.S. Soong and E. Maynard 1987, Standards of Water Quality, Discussion Paper written for the Environmental and Public Health Review
- South Australia various years, Annual Report of the Chief Protector of Aborigines, Government Printers, Adelaide
- South Australia various years, Report of the Aborigines Office Board, Government Printers, Adelaide
- South Australia 1981, Pitjantjatjara Land Rights Act, Government Printers, Adelaide
- South Australia 1987, An Interim Report of Uwankara Palyanyka Kanyintjaku (A Strategy for Well-being), Nganampa Health Council, SAHC and Aboriginal Health Organisation, Adelaide
- South Australia 1987a, Report of the Committee of Review of the Delivery of Human Services to the Aboriginal Community in South Australia, Adelaide
- South Australian Department of Housing and Construction 1987, Report of the Essential Services Workshop held in Ernabella 26 March 1987, Aboriginal Works Unit, Adelaide
- A. Steel 1987, Review of TAFE Programs in the Pitjantjatjara Lands of South Australia, Grad. Dip in Adult and Further Education Thesis, SACAE - Underdale, Adelaide
- J. Sunberg 1986, Details of Housing Projects on the AP Lands, Paper written for the Review
- S. Thomas and M. Corden 1977, Metric Tables of the Composition of Australian Foods AGPS, Canberra
- N. Thomson 1982, "Aboriginal Nutrition. The Need for a Cultural and Historical Perspective" Pros. Nutr. Soc. Aus, 7: 20-29
- P. Thompson et al 1987, Interim Report, the Nganampa Research and Development Team
- P. Torzillo and J. Erlich 1984, "Pneumonia in Aboriginal Children: Problems in Management" in R. Douglas and E. Kirby Easton eds Acute Respiratory Infections in Childhood, U Adelaide, Adelaide
- P. Torzillo 1987, Public and Environmental Health in Pitjantjatjara Lands - Issues for Consideration, Discussion Paper written for the Environmental and Public Health Review
- P. Toyne and D. Vachon 1984, Growing Up the Country - The Pitjantjatjara Struggle for Their Land, McPhee Gribble/Penguin Books
- D. Vorst 1987, Dog Program Assessment, Pika Wiya Health Service
- WHO 1979, Formulating Strategies for Health for All by the Year 2000, WHO, Geneva
- WHO 1984, Guidelines for Drinking Water Quality Vol 1-3, WHO, Geneva
- B. Walker 1981, Excessive Nitrates in Drinking Water. Background to the Problems and Technological Options for Denitrification in Aboriginal Communities, Discussion Paper
- P. and N. Wallace 1977, Killing Me Softly, Thomas Nelson, Melbourne
- J. Willis 1987, When is a House not a House? Aspects of the Social and Physical Environment, Discussion paper written for the Environmental and Public Health Review
- J. Willis 1987a, Personal Income, Discussion paper written for the Environmental and Public Health Review
- U. Winblad and W. Kilama 1985, Sanitation Without Water, MacMillan, London
- E. Young 1984, Outback Stores: Retail Services in Northern Australian Aboriginal Communities, ANU NARU Monograph Darwin

UWANKARA PALYANYKU KANYINTJAKU

(A STRATEGY FOR WELL-BEING)

An Environmental and Public Health Review within the
Anangu Pitjantjatjaraku lands

A co-operative initiative by the:

Nganampa Health Council Inc.
South Australian Health Commission
Aboriginal Health Organisation, S.A.

JUNE 1986

1. Membership of Review Committee

- Dr Malcolm Collings - Public Health Service (Chairman)
- Mr Punch Thompson - Nganampa Health Council (Co-chairman)
- Mr Glendle Schrader - Nganampa Health Council
- Mr Robert Stevens - Nganampa Health Council
- Ms Margaret Hampton - Aboriginal Health Organisation, SA
- Dr Chris Wagner - Western Sector, SAHC
- Dr F.S. Soong - Public Health Service (Project Co-ordinator)

Co-operating Members, including

- Ms Nora Ward - Nganampa Research and Development Team
- Mr Paul Pholeros
- Mr Stephan Rainow
- Dr Paul Torzillo - Physician, Department of Medicine, RPAH Sydney
- Mr Len Fisher - Health Surveyors, PHS
- Mr John Dalle-Nogare
- Dr Gavin Hart - STD Unit, PHS
- Dr Scott Cameron - Communicable Diseases Control Unit, PHS
- Mr Bob Fleetwood - Pharmaceutical Unit, PHS
- Dr David Roder - Epidemiology Unit, PHS
- Mr Tony Davies - Pitjantjatjara Council Inc
- Mr Jon Willis
- Mr Brian Johnson - Anangu Pitjantjatjara
- Ms Lucy Lester - Pitjantjatjara Women's Council
- Mr Les Nayda - Aboriginal Works Unit, DHC
- Mr John Williams - Aboriginal Co-ordinating Unit, DCW
- Ms Raelene Carbins - Aboriginal Education Unit, Dept of Education
- Mr Roger Thomas - School of Aboriginal Education, DTAFE
- Ms Jan Sunberg - Aboriginal Housing Board
- Ms Elizabeth Butler - Aboriginal Housing Unit, SAHT
- Ms Dawn Allen - Department of Aboriginal Affairs, Adelaide
- Mr Barry Johnson - Aboriginal Development Commission, Alice Springs
- Mr Patrick Monaghan - Centre for Appropriate Technology, Alice Springs
- Dr Bruce Walker

2. Aims of the Review

- ° To establish a comprehensive profile of the environmental and public health status of each of the communities and homelands.
- ° To seek and review community as well as organisational attitudes and responses to various environmental and public health measures in order to assess their role in determining the effectiveness of these measures.

- ° To review the resources (ideas and models, people, materials and money) available for environmental and public health improvement and for the maintenance of public health facilities.
 - ° To develop, in conjunction with the communities and the relevant organisations, a strategy to overcome the environmental and public health problems identified through the review. Elements of such a strategy may include:
 - i Recommending appropriate structures at all levels to plan, implement and evaluate environmental and public health services, facilities and programs and appropriate funding arrangements.
 - ii Developing priorities and goals for environmental and public health programs.
 - iii Developing designs and options for environmental and public health facilities, including housing, and identifying and setting appropriate standards, where necessary.
 - iv Developing appropriate education courses in environmental and public health for various categories of workers, including the training of Aboriginal health and environmental workers.
 - v Providing support to local communities in their efforts to increase community awareness and participation in environmental health projects.
3. The communities covered by the Review are all within the Anangu Pitjantjatjaraku lands of South Australia, the main population centres being:
- | | |
|-----------------------------------|---------------------|
| Iwantja (Indulkana) | Amata |
| Mimili | Angatja |
| Mintupayi (Mintabie) | Kalka |
| Kaltjiti (Aparawatatja or Fregon) | Pipalyatjara |
| Yunyarinyi (Kenmore Park) | Pukatja (Ernabella) |
4. The main aspects of the environmental and public health to be reviewed include health status, water, housing, sewage, rubbish, toilets and ablution facilities, personal income, food supply and stores, maintenance, homeland resources, and the general physical and social environment.

5. Methodology

The Review team will undertake a co-operative approach to the project, meeting as a group at periodic intervals for the analysis and dissemination of information, and for the assignment of specific tasks.

It is intended to gather together the information and expertise within given areas relating to specific health topics, resulting in the development of a document accepted by the Nganampa Health Council and its members and the South Australian Health Commission, as an Environmental and Public Health Strategy for the future.

In consideration of the cross-cultural nature of the project, the process of information gathering and analysis shall be conducted as a two-way learning experience.

A report of preliminary findings is to be tabled after six months from the Review's inception. If any information is deemed to be of a confidential nature, the Nganampa Health Council reserves the right to retain information, or publish a limited circulation appendix to the Report.

6. Accountability

The Project Co-ordinator reports to the Deputy Director of the Public Health Service. The Nganampa Co-ordinators report to the Nganampa Health Council Executive. Co-operating members report to the Review Team.

The findings of the Review will be subject to the agreement of SAHC Public Health Service and the Nganampa Health Council Executive.

7. Duration of Review

Approximately one year.

8. Resource Responsibilities

SAHC -

Salary for Project Co-ordinator
 Travel for SAHC Officers
 Fees for Consultants, engaged by SAHC
 Workshops - two, one in Adelaide and another in Alice Springs
 Publication of papers and final report

NHC

Salaries and resources for Nganampa Research and Development Team as available.
 Resources of NHC Clinics and staff as available.

APPENDIX II

When is a House not a House?

Aspects of the social & physical environment

Jon Willis
Pitjantjatjara Council Anthropologist

There is a tired old chestnut that says that a door is not a door when it is a jar (ajar). Like much of our humour, this joke works on the principle that the verbal and conceptual categories that we use have flexible boundaries. When the Nganampa Review team was designing a research approach to housing on Pitjantjatjara communities, I recalled the joke, and began thinking about what we meant - verbally and conceptually - when we talked about a house. It is an anthropological truism that even concepts as apparently straightforward as "house" have quite different meanings cross-culturally, and it seemed to me that the Review risked a great deal in assuming that what we meant implicitly by house was the same thing that Pitjantjatjara people meant when they used our word for it. The Review came up with two answers to the question, one of which describes current housing on Pitjantjatjara Lands, and the other gives directions for future housing policy. A house is not a house when it is simply an expensive and inappropriate cultural artifact; more importantly, a house is not a house when it is simply a provider of health hardware. This paper examines the gulf between needs and expectations in the provision of housing to Pitjantjatjara people (Anangu). It also looks at the possibilities for providing housing which can meet both needs and expectations.

One of the most revealing aspects of our western notion of house is that we are able to make a distinction between a "house" and a "home". We are able to distinguish between the physical and social aspects of our most intimate environment, between the parts that are built from bricks and mortar, and the parts that are built from close social bonding, to the extent that it is possible, even commonplace, to separate the two aspects and move one's home from house to house. This separation is possible because of the very narrow and clear definition that we apply to the concept of house: it most commonly means the residential building that comprises the focus of our non-public living. There are a number of concepts embedded in this definition: firstly the western idea of residence implies a style of life bounded by a highly limited set of geographical locii; secondly, as a house is a building, we make distinctions between house and garden, between indoors and outdoors; thirdly, our style of life allows for a radical separation of the public and private spheres. Our idea of a house, therefore, contains a coded blueprint of central aspects of our culture and lifestyle. The corollary of this is that the houses we design and build reflect this coded blueprint and implicitly suggest the best ways of living within them.

This is not to say that this "blueprint" for living accords with any actual lifestyle. It is arguable that housing in Western communities actually fails to adequately meet the housing needs of the people who inhabit it. In part, this is because the design of the house often fails to even address the lifestyle of its inhabitants: the design of housing is typically the province of a detached designer, who may have little or no effective contact with the people who are to live within the house, and consequently little knowledge of their lifestyle demands. Consequently, the design of a house represents not so much a response to the needs of its prospective inhabitants as a statement by the designer of his or her ideas about lifestyle. A study of post-war public housing

in Britain, for example, confirmed that when the activities of the average week of the designer of the housing were charted against the activities of the average week of the person for whom the housing was designed, the design of the "public" housing was ideally suited to the lifestyle of the designer.

However, it is not as true to say that people's expectations are not met by the houses they choose to live in. Key elements of the professional "discourse" of house designers filter into the popular ideas of house design to the point that people actually aspire to the lifestyle that designers have created for them. Hence, while it is uncommon that the demands of the way we live are actually satisfied by the houses in which we live, we have developed both sophisticated rationalisations and complicated servicing mechanisms that allow us to overlook the shortfalls of the structures in which we live.

Further problems inevitably occur when this culture-specific structure - the generic triple-fronted brick veneer home - is naively used as a model for housing in non-Western communities where there are no sophisticated rationalisations and complicated servicing mechanisms. To begin with, the needs and expectations which such a structure must meet in a western community are different to the housing needs and expectations of people living in, for example, remote Aboriginal communities. These differences lie in a number of areas. Firstly, the definitions of a house, of residence, and of the distinctions between inside/outside and public/private are very different. Secondly, the historical development of the western house has been tied to concomitant developments in community infrastructure, in notions of health and hygiene, in the division of labour, and in the structure of families. The problems of building western houses for people with a non-western lifestyle have characteristically led to either an adaptation by residents of the imposed structure so that it meets the needs that the original design failed to meet or to the complete failure of the structure and its abandonment or destruction.

During the collection and analysis of housing data for the Review, the Nganampa Review Team looked at the way the Anangu live in and around the structures that constitute the built environment of communities, in addition to documenting the state of the buildings. It was important to avoid regarding the built part of the community environment as constituting the totality of people's physical environment. There is a compelling, but ethnocentric tendency to focus on buildings. To do so is to ignore the fact that Anangu interaction with this part of the total environment is clearly at odds with the typical modes of interaction with elements of the built environment that prevail, for example, in suburban Adelaide. While it would be unusual for an Adelaide family to use their house for some part of the year, and a temporary wiltja in the garden for other parts, this is common practice in communities and homelands on the AP Lands. Also, most Adelaide families only use their houses for very limited periods of time and for a narrowly prescribed range of purposes: the majority of people work, for example, or go to school for the major proportions of each weekday in locations separate and some distances from their houses.

An important task of the team, therefore, was to identify where the assumptions embedded in the design and construction of buildings suggest kinds of interaction that should take place between the building and its users are at odds with the way people actually use them. For example, one such assumption is that men and women have the same kinds of interaction with houses, and that their needs could therefore be met equally by one type of structure. The point is not necessarily that there should be separate kinds of structures to meet the differing needs of men and women, but that the process of consultation which typically involves men dealing with men does not allow for the unique needs and perceptions of women to be recorded or addressed. Nor is the possibility canvassed that the solutions other than built structures may be called for. Another assumption is that the population for whom the built environment has been created is sedentary, or at least is becoming more sedentary. Recent research by the Pitjantjatjara Council in Indulkana, Mimili and Fregon has suggested that the population is actually highly mobile, especially within AP Lands, but that this degree of mobility differs according to gender: men travel more than women. It was impossible, therefore, to narrow a Pitjantjatjara person's physical or social environment to a single house, or even a single community. In western terms, Anangu residence comprises a number of different built and non-built environments for varying lengths of time for different purposes. So a family might move from house to wiltja, from community to homeland, from Mimili to Fregon and all these structures constitute the unique physical environment of this family. For some men, the particular physical environment that they occupy most consistently is the motor vehicle in which they shift from co-ordinate to co-ordinate within their total residential environment. For women the pattern is different: their mobility is hampered by children and limited access to means of transport. Similarly, although the social environment includes families, communities, homelands groups and so on, the "domestic unit" - that is, the household - actually encompasses a wide range of people, spread over a very large geographical area.

There are a number of other western concepts embedded in elements of the housing that has been introduced to Anangu communities that have little overlap with traditional Anangu ideas. While these elements may meet needs in the society where they were developed, they have often proved wildly inadequate for Anangu society because of the lack of "conceptual overlap". I refer particularly to such conceptual areas as hygiene, nutrition, and disease causation as these issues have obvious implications for environmental/public health. Each of these areas has political, economic and social dimensions which are complicated by the unique cultural environment in which it operates.

The issue of hygiene, as an example, must be considered in the context of a nomadic desert people now living in communal conditions. These conditions are quite dislocated from the previous living style and conditions of Anangu, which relied on adaptive strategies developed over thousands of years of desert living. Unconditioned by western reflexes and attitudes, the classification of items in the environment as hygienic versus non-hygienic must follow the reflexes and attitudes supported by the cultural ethos: Anangu are not accustomed to non-biodegradable refuse. The western notion of hygiene depends on a particular and culture-specific definition of what constitutes "dirt". The Anangu division of the continuum from clean to dirty is divided in a way that is

ideal for desert life, but maladaptive for transplanted suburban living: the obverse of this is that a built environment which is functional only when western methods of waste management (which includes both the complex of practices known as "housework", as well as building and grounds maintenance, and services such as liquid and solid waste removal) are operating efficiently may well be maladaptive for an Anangu lifestyle.

Further, there is only a very limited indigenous structure for housework as it has developed in the western system. Although there was certainly a division of duties such that routine camp cleanliness was maintained, the kind of labour-intensive, full-time occupation that housework has become for Western women was demanded neither by traditional Anangu division of labour, nor by the type of structures that they lived in and around. The institution of a profession of domestic labour ie the housewife has developed in tandem with the historical development of the house in the west. However, in Anangu terms, the "house" has had a limited historical development, without the concomitant changes in social structure that occurred from the time of the agricultural revolution. Consequently, the assumption that there is something inherent in a house that suggests the way it should be kept and by whom is inadequate. Increasingly, the sexual division of labour in industrial societies has increasingly defined the house as the focus of women's labour and increasingly the structure of housing has been geared to efficient maintenance by women and their support staff in the building maintenance industry (gardeners, plumbers, handymen, etc). Anangu lifestyle makes no equivalent division of labour, and Anangu society does not have the luxury of an industry of maintenance people - either traditionally or in the current political and economic climate. Transplanted city models of housing without adequate funding for maintenance simply crumble: Pitjantjatjara housing amply demonstrates this principle.

Such factors as these have had two main implications for the Review Team:

1. Although it was found that there is a chronic shortage of adequate facilities, simply increasing the number of facilities is not an adequate response. At the planning phase, always assuming the luxury of a planning phase, two types of response are called for:
 - i The nature of the facilities provided must be closely examined to ensure that they are appropriate for meeting Anangu needs. Fairly obviously, the first part of this task is to spend some time identifying, with Anangu, what these needs are. The second part is to design, again with Anangu, houses that are actually geared for the way people want to live in (and out of) them.
 - ii If Anangu want more of the same kind of facility, and the survey results indicate that they do, and assuming that more of this kind of facility can be provided, then a large amount of thought and planning needs to be put into changing people's perceptions of what those facilities imply in terms of health, and assisting people to develop adaptive strategies for living healthily in them.

What this response is based on is that, despite their clear inadequacy, the kind of facilities that already exist approaches,

with varying success, the Anangu ideal of what a "house" is - with teacher housing as the model of the best that a "house" can offer. The implication is that people need to be taught how to live in the kind of houses that they've been taught to want.

2. The second type of response is to imply that people are not maladaptive to structures, but that the reason facilities are inadequate is because the structures are maladaptive to the style of life that they are meant to support and that quite radical departures from current policy with regard to the built environment are called for. So, for example, it may prove more appropriate to redirect housing funds that are currently providing inappropriate static shelters to providing more mobile and adaptable shelters. The findings of the Review Team with regard to the provision of environmental health 'hardware' do not preclude housing geared for the highly mobile lifestyle that some people lead or a housing policy that takes greatest advantage of existing attitudes to hygiene.

There are however problems of acceptability with proposals which challenge institutionalised ideas of what a house should be. For a start, proposals need to be politically acceptable to governments anxious to be seen attacking the problem of inadequate housing on Aboriginal communities (assuming that governments remain anxious to be seen to be doing something in this regard). Equally, Anangu attitudes of what properly constitutes a house have been greatly affected by their experience of the kind of housing that has been provided to them to date, and to be viewed as a solution to housing problems, alternatives need to be aimed at people's expectations. An ongoing task from the review will be to explore the possibilities for compromise between received and entrenched attitudes to what constitutes "proper" housing for governments and Anangu, and the kind of structures that are demanded by Anangu lifestyle. Maybe then, we'll have to look at ways to re-educate governments and Anangu so that they can recognise when a house is a house.

AWS

Anangu Winkiku Stores

(ABORIGINAL CORPORATION)

PROVIDING RETAIL MANAGEMENT, FINANCE & TRAINING SERVICES

PHONE 50 5450

PO BOX 8495

ALICE SPRINGS

NT 5750

B. Role

Since early in 1987, the role of AWS has changed significantly. From being a largely advisory body, it has developed into a Supervisory body.

AWS now works along the lines of an Independent Stores Group. It is a group of individually owned community stores, who have voluntarily joined together for their common good. They utilise a number of services provided by the organisation.

There are two parts to AWS, the Stores and the Administration section.

1. STORES

1.1 A.P.

At the end of June 1987, six aboriginal businesses have joined the AWS group. These are Fregon, Fregon Spare Parts, Ernabella, Amata and Pipalyatjara, with Indulkana also considering the possibilities of joining from 1st July '87.

1.2 Consultancy

In addition to the above stores, AWS Admin has been engaged as consultants in the communities at Titjikala and Nyirripi. These consultancies are via the Aboriginal Development Commission, and are generally in connection with the building of new stores or upgrading existing facilities.

A number of additional community stores are considering joining the new AWS group.

2. AWS Administration

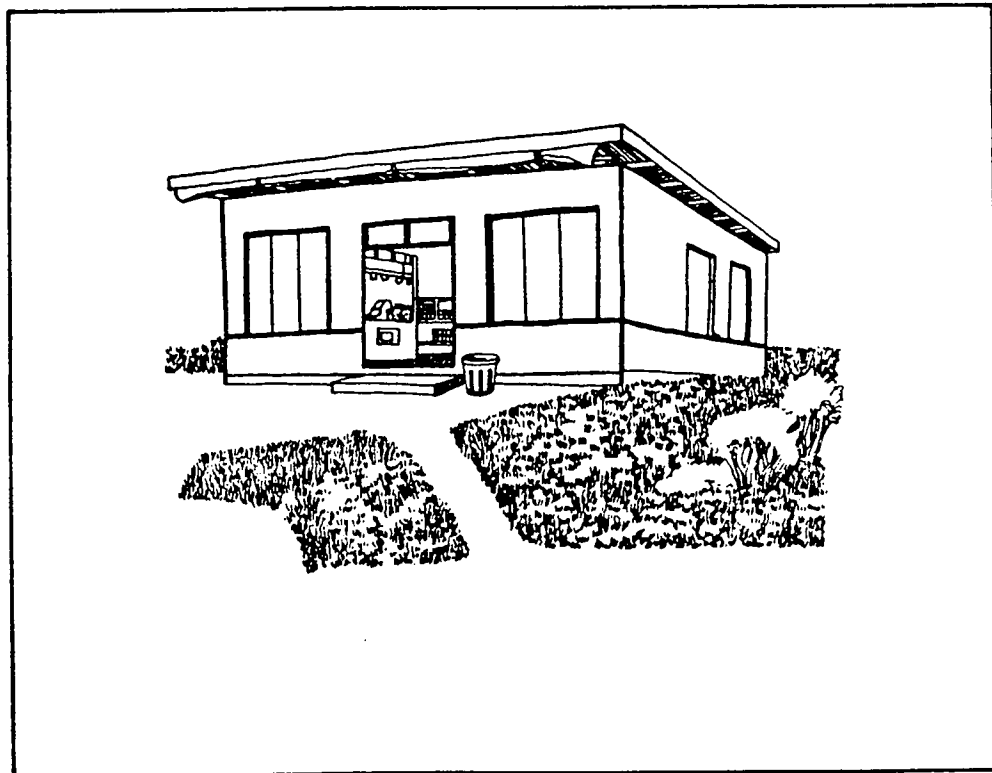
The Administration section is based in the regional centre of Alice Springs. It contains the Finance, Purchasing and Management Sections, and co-ordinates the activities of the Training and Relief Management sections.

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NT 5750

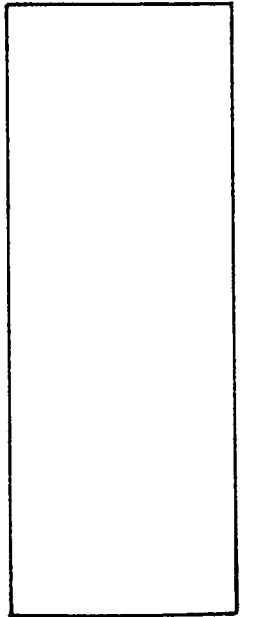
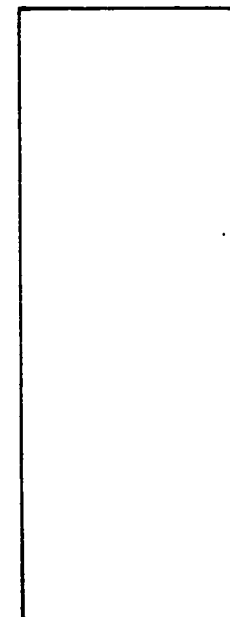
WHO WE ARE!

and what we do



A. Name

The name Anangu Winkiku Stores - AWS means "Stores that belong to the (Aboriginal) people."



C. Functions

1. Management Services

1.1 Store Policy - in consultation with each community, establish a series of store policies covering areas such as Hours, Mark-Ups, Stock Ranges, Store Manager duties, Pay Rates, Supervision Arrangements.

- in consultation with the regional umbrella organisation (e.g. Pitjantjatjara Council, Central Land Council), establish regional policies covering areas such as Staff Contracts, regional buying policies, health and hygiene issues, and By-Laws.

1.2 Store Procedures

- the implementation and further development of basic Stock Control and Cash Control procedures used in stores, in consultation with Store Managers, Banks and Accounting organisations. This will include the monitoring of Income/Expenditure reports, supportive visits and problem-solving.

1.3 Community Relations

- providing a Public Relations function, on both regional and community levels. Also, being "between" managers and communities, suppliers and stores - providing the essential link between different aspects of the store.

1.4 Merchandising

- investigating ways to improve store presentation and coordinating merchandising materials supply, industry information and store layout.



2. Training Services

AWS is in the process of establishing a retail Training Facility at Fregon S.A. This facility will be used for Training, Education and Development programmes for Storeworkers and Decision Makers in communities.

2.1 Objectives

The AWS Store Training Service will have three main objectives:

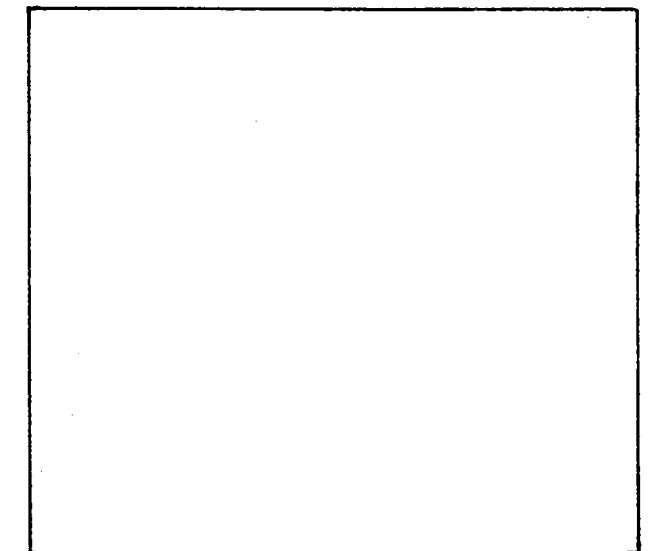
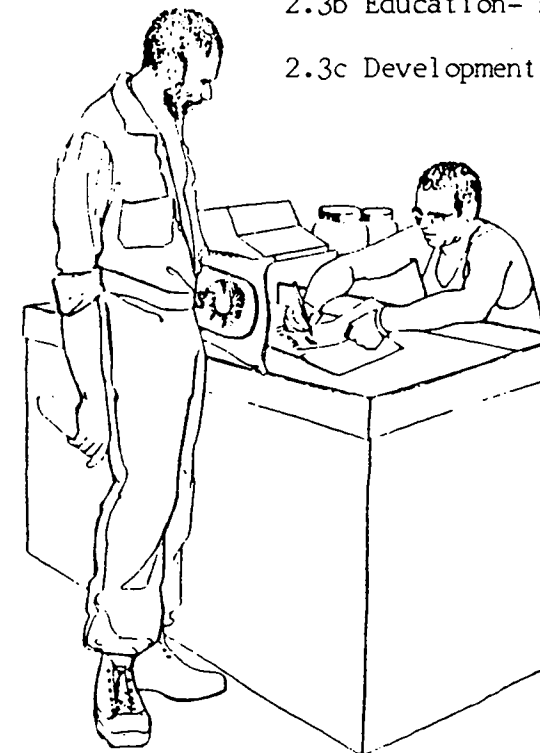
- 2.1a to provide stores with workers who have the necessary skills to operate the store confidently and successfully and to further provide the on-going support to continue their training in the community.
- 2.1b helping STOREWORKERS to gain confidence in their abilities and to develop their self-esteem as well as improving their job knowledge and skills.

2.2 Programmes

- 1. Basic Storeworker Courses - for new or inexperienced storeworkers
- 2. Advanced Storeworker Course - for experienced storeworkers
- 3. Trainee Storeworker Course - for Aboriginal managers
- 4. Orientation Course - for new staff working in remote communities
- 5. Management Seminars - for current Managers
- 6. Seminars (Non-Store) - for programmes organised by other resource groups
- 7. In-Store Training - conducted inside remote communities by visiting trainers

2.3 Needs

- 2.3a Training - Skills and Knowledge in the operation of remote community stores
- 2.3b Education- Developing Understanding of the Role of the Store, retail Philosophy - the WHY of the job.
- 2.3c Development - Preparing people for the future - when Aboriginal people will be in full control of their own enterprises.



3. Financial Services

3.1 Implementation of Store Reports

AWS has developed a system of retail reports that enable stores to keep track of Income and Expenditure on a consistent regular basis.

3.2 Supervision of Store Procedures

Where AWS is involved in a Contract relationship with a community store, we agree to supervise the receipt, collation and analysis of store information.

3.3 Production of Monthly Performance Reports

From the information received from the store, reports are prepared by AWS, and taken to the community, to be discussed by AWS with the Storemanager and the Community.

3.4 Analysis of Financial Reports/Statements

Working in conjunction with store's individual accountants.



4. Relief Management Services

The provision of reliable, competent managers is essential to the on-going successful operation of retail stores. In Aboriginal communities, this need is greater, because the absence of suitable resources within them to fill the gaps.

4.1 Annual Leave of Storemanagers

Most Storemanagers in Central Australia, receive 6 weeks Annual Leave per year. This is too long a period for most store staffs to be left with the store alone. Ordering, Banking, Paying of Accounts can all become very confusing over such a period. The provision of a good Relief Manager can overcome this problem.

Where AWS has a contractual arrangement with community stores, the costs of Relief Manager services is included in the Monthly Service Fee. This means the cost is spread over 12 months, and removes the cash-flow problem of paying both permanent and relief managers for 6 weeks each year.

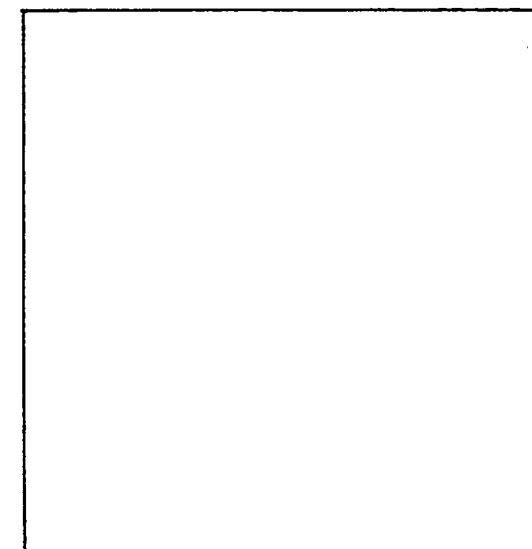
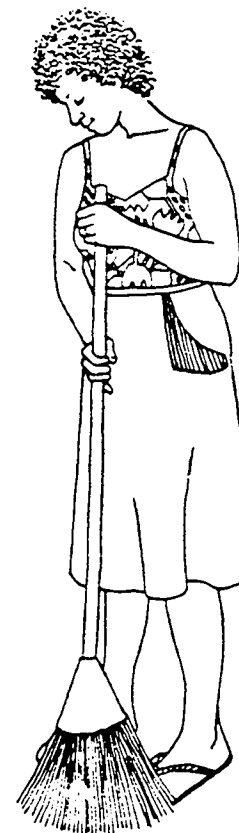
4.2 Emergency Reliefs

There are occasions when unplanned relief Managers may be needed. Family crises, sudden terminations - these could result in the need for an immediate Relief person.

Previous practice of bringing outside people in from coastal areas (e.g. Sydney, Adelaide) - is a very costly exercise.

4.3 Supervision of Local Staff

A growing number of managers wish to allow the local staff the opportunity to manage the store in their absence. AWS is very keen to promote this idea, and have staff who can operate in a sensitive way, allowing staff to make decisions and run the store, whilst providing the necessary back-up and advice to help avoid major problems arising.

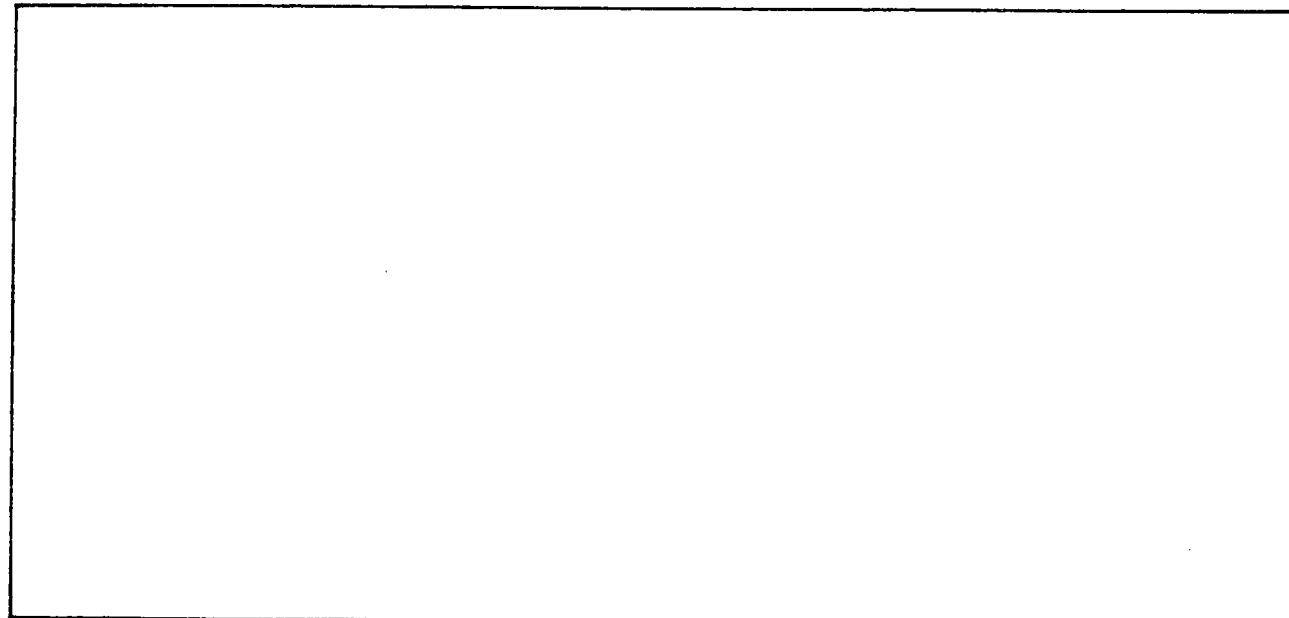


D. Who Pays?

Since its inception in 1983, AWS has been supported by a number of funding sources:

1. ADC has been the major funding body, and in 1987/88, has again indicated a willingness to assist.
2. DEIR has provided assistance, related to training functions of AWS in the past.
3. Commonwealth education has also provided assistance, mainly in training areas also.
4. Fuel Levy via Mobil, whereby stores have agreed, as part of a wider marketing strategy, to pay a 1¢ levy per litre of fuel sold, to AWS.
5. Relief Management Fees, charged to an actual cost basis to the stores that have to use them.
6. Service Fees, charged to stores when additional work was carried out for them.
7. In our Budget considerations for the next five years, this is our plan for becoming independent of Government funding:

	1987/88	1988/89	1989/90	1990/91	1991/92
Grant ADC	34%	25%	12%	5%	NIL
DEIR Fees	19%	16%	13%	5%	NIL
Stores (4% each)	32% (8)	40% (10)	50% (13)	65% (16)	70% (18)
Supp. Rebates	9%	10%	10%	10%	10%
Consultancy Work	6%	9%	15%	15%	20%



E. Who Controls?

1. The control of AWS is held by the Aboriginal people (where AWS is working).
2. AWS is an incorporated Aboriginal Association under the Aboriginal Councils and Associations Act, 1976.
3. The members of AWS are all Pitjantjatjara, Yankunytjatjara and Ngaanyatjarra people of Central Australia.

4. Annual General Meeting

An AGM is held every year, to hear reports on AWS activities and affairs (since the last AGM); to hear reports on AWS Finances; to appoint auditors and deal with any store business. There must be representatives from at least half of Aboriginal communities associated with the Pitjantjatjara Council, before any business can be carried out.

5. Board of Directors

The Governing Committee (to be known as "The Board of Directors"), are given the power to carry out the wishes of the AGM.

Each community associated with the Pitjantjatjara Council may appoint one member to be on the Board, at the AGM.

(NOTE: At present, the duties of the Board are carried out by the A.P. Executive.)

6. A.W.S. Executive

The AWS Constitution provides for an Executive, appointed by the Board of Directors.

The Executive consists of the Director of AWS (also the Director of Pitjantjatjara Council), the Co-Ordinator/Advisor of AWS, the Chairman of A.P., and one nominee of the Aboriginal Development Commission. The Board may also appoint other persons as required. The Executive is responsible for the management of AWS affairs, at the direction of the Association and the Board.

7. AWS Co-Ordinator/Advisor

The AWS Co-Ordinator/Advisor is responsible to the Board of Directors, through the Executive, for the day-to-day operation of AWS.

APPENDIX IV

The role of Health Surveying Services in AP Lands

J. Dalle Nogare
Health Surveying Services
SAHC

The aspects of environmental health in AP Lands that are monitored routinely by Health Surveyors of the SAHC include the following:

- : Food hygiene, handling and transportation.
- : Water supplies and their quality.
- : Insect/pest and vermin and their control.
- : Personal/public hygiene and sanitation.
- : Waste collection and disposal, both solids and liquid.
- : Communicable diseases control.
- : Recreation activities - swimming pool, camping areas.
- : Dog population and their control.

The assistance provided by the Health Surveying Services in training programs for Aboriginal communities include:

- : Teaching an environmental health course to Health Workers, organised by education officers of AHO.
- : One to one education involving Aboriginal people employed by the community in the maintenance of water supplies, disposal of wastes, food storage, transportation/handling, insect pest control and others.
- : Arranging and providing lectures and organising field visits for both Health Workers and Health Educator employed by NHC.
- : Involvement of the Nganampa Health Educator in patrols to the AP Lands.

Some options for further discussions

1. The current notes used by the Health Surveying Services for the Health Worker Environmental Health Course are not suitable for NHC Health Workers without adaptation. However, Nganampa Health Educators could use the notes as a basis for planning their course.
2. The employment of Environmental Health Officers by NHC for the AP Lands could serve the following purposes:
 - : Introducing basic ideas and discussion on environmental health matters for Health Workers in AP Lands.
 - : Stimulating discussions in various communities on environmental health matters on a regular basis. This could benefit people involved with essential services, such as collection and disposal of wastes and running of food stores.
 - : Overseeing the health workers role and function in environmental health in their own community with the view of improving and/or expanding the services.

- : Seeking further assistance if needed through NHC or the Health Surveying Service.
- : Identifying specific environmental health issues to discuss with the Health Surveying Services during patrols throughout the Northwest. Liaison between the Health Educator and Health Surveyors on patrol is important, particularly in regard to essential services.

Health Surveying Services (SAHC) could support NHC by providing assistance in the following ways:-

- : Field visits and lectures on specific environmental health matters for Educators and Health Workers.
- : One to one education for community staff involved in essential services.
- : Lectures/discussions to Health Workers during patrol as arranged by Health Educators employed by NHC.

Summary

It is important that the trained Health Worker who is the key member of the primary health care team is able to recognise environmental health problems on which they could give immediate advice or call on expert assistance from the appropriate professional staff, doctors, nurses, health surveyors, health educators.

As the Health Workers' skills and confidence increase, the professionals' key roles will change from giving direct service to acting as advisors.

APPENDIX V

Old People's Study : Their situation and needs.

JO HARRISON. Consultant
to Pitjantjatjara Women's Council

Background

The study, although not a formal part of the UPK Review, was conducted as a result of Pitjantjatjara Women's Council's request that funds be sought to look at the situation of old people living on the AP Lands. Funding for a small scale investigation was obtained from the Commonwealth Department of Community Services and Health and the SA Health Commission under the Home and Community Care Program. This was used to employ an Anangu researcher (Myra Watson), a non-Anangu worker (Linda Rive) and a consultant (Jo Harrison) to analyse and write up the research and present a report to Women's Council. The consultant was also involved with preparing the submission for the funding for the project. Discussions were held with the Community Council of Indulkana on the priority of services needed by the old people there.

Interviews were conducted by the researchers over a period of two weeks in June 1987 at Indulkana and Mintabie outstation. Questionnaires were drawn up as a loose guide to interviewers when talking with old people and carers and professional workers who work with old people. Additional comments from each group were also recorded in writing by interviewers where appropriate.

From an initial list of all Age Pensioners, Widow's Pensioners and Invalid Pensioners, the community doctor and Myra Watson selected 32 people thought suitable for interview about their needs and situations. A short list of the six Age Pensioners thought to be most in need was drawn up and seven others were added to this. A total of 13 old people were followed up for interview. The interviews were very informal and held in people's own camps. Three carers were able to be interviewed. They were "community carers" who voluntarily looked after the people they saw as needy. Interviews were also conducted with Anangu and non-Anangu workers who had old people under their care.

While the number of people interviewed was small, this research, which asked people about their experience as old people and how they saw their needs, as well as how workers saw their needs, yields valuable information for planning purposes.

Of the 13 old people interviewed, eight were women and five men. Eight were from Indulkana and five from Mintabie. Five were between 60-70 years old and eight were over seventy (age estimates were approximate only). Eight people were disabled (unable to walk, senile, blind or deaf). Of the carers interviewed, seven were men and six women.

A summary of findings

1. Family/Community Care

This was the main type of care for the old people in the study. In the absence of care by close family members, old people relied on broader community care (health workers, wood deliverers, helpers, etc). All thirteen old people interviewed said they were being cared for to some extent by the family. Carers included nephew (4), daughter or sister (3), son (1), granddaughter (2), wife (1), husband (1) and grandson (1). The absence of family care made someone a ngaltutjara, "poor thing". Six old people said that while family members provided care, they did have significant problems meeting their needs. These six had difficulty in getting around all the time or cash their own pension cheques. Two people were senile and tended to disturb other people.

All old people said they received some help, which ranged from wood delivery to shopping or cooking. Eleven old people said they needed additional help with personal care (1), cooking (1), laundry (1), wood (5), transport (2) and getting clothes (1). This list was influenced by seasonal factors.

2. Income

All 13 old people were dependent on DSS for income. Seven used the bank or shop bookup. Eight said the pension was nowhere near enough. The five who said it was sufficient were mostly giving it to their carers and getting food bought for them.

3. Mobility

Moving about was a problem for over half of the old people. This ranged from cashing cheques to going to the shop and getting wood, bush tucker or second hand clothes. They mentioned the value of fire for warmth and bush tucker for nutrition.

4. Hygiene

One old person talked about wearing clothes until dirty and throwing them out and suggested a washing machine might help. Eleven old people said they had no hot water. Two had access to hot water nearby. Four had no cold water, while nine had access to cold water or had it carted in. Over half had no proper garbage disposal. All old people used health workers.

5. Nutrition

All the old people had high sugar and carbohydrate intake. Many said they preferred bush food but could not go bush. One of the community carers said she gave food to the old people most in need. The Family Centre used to serve a hot meal five days a week but was no longer open. While some workers interviewed recommended the Centre highly, only one old person mentioned it unprompted as a suggestion for a service.

6. Housing

No old people lived in a house. Eight lived in wiltjas and three lived on a verandah with a fire. The 'yard' as referred to in this Review report is particularly a focal point for old people. The housing situation of old people raises important questions, particularly their preference for, and use of, more traditional living facilities such as wiltja, fire, etc.

7. Independence

One non-Anangu worker pointed out the importance of not intervening too early and taking away family care and responsibility. It is important that any housing or service provided to old people does not reduce family care and does not impose a structure which is not wanted by the old people. European-style services for old people such as Meals on Wheels which are already a part of the HACC Program may well be totally inappropriate. The old people living on the homeland felt very happy and independent.

Mobility is a key to independence for old people. A vehicle may be a vital piece of health related equipment to facilitate bush trips for wood, tucker or other business.

Those old people lacking direct family care were seen as needing a home such as Hettie Perkins or Finke Hostel. People recognised the problem, but said that wandering people with senile dementia needs to be examined further so that communities can look at a range of options for coping with this problem. The Central Australian Aboriginal Congress are currently conducting research into behaviourally disturbed people's needs, which will include old people with such a problem.

None of the old people thought that a hostel was a good idea.

8. Carers

Only three carers were interviewed, as they were particularly unwilling to talk about their situations. They were hard to find and difficult to talk with, according to interviewers. One worker said "the subject of old people always has a lot of shame attached to it". The carers interviewed were all caring for a wide range of old people. They saw the main needs at the moment as a wood-gathering and delivery service, closer family help, problems of senile and wandering people, clothes, warmth and meals either through the Family Centre or another service. No one had heard of the Carer's Pension through DSS, for which some of the carers may qualify. (They were given further information). All the carers emphasised the importance of traditional systems of care.

9. Others Interviewed

Eleven other people were interviewed, including health workers, Council members and other non-Anangu workers. They identified a list of needs similar to that of the carers and reiterated the importance of homelands and the need for assistance with access to the bush so that old people can remain in control of their lives.

One worker said of the study "I just hope this doesn't end up in yet more interference in old people's lives". It is critical that assistance given be in Anangu control so that the genuine needs of the old people can be met within a traditional context. The funding bodies with responsibility for programs such as HACC must hear this and act accordingly, making their programs flexible and appropriate.