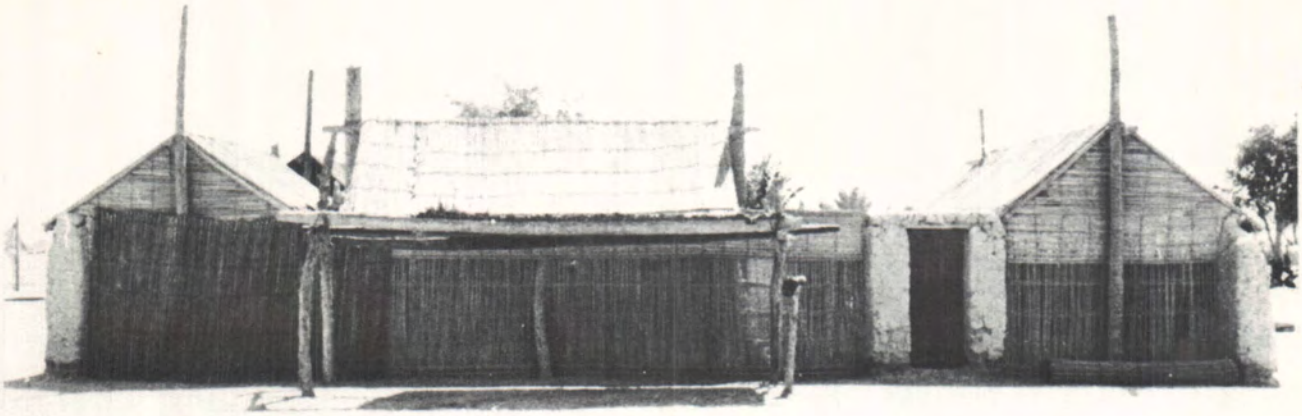
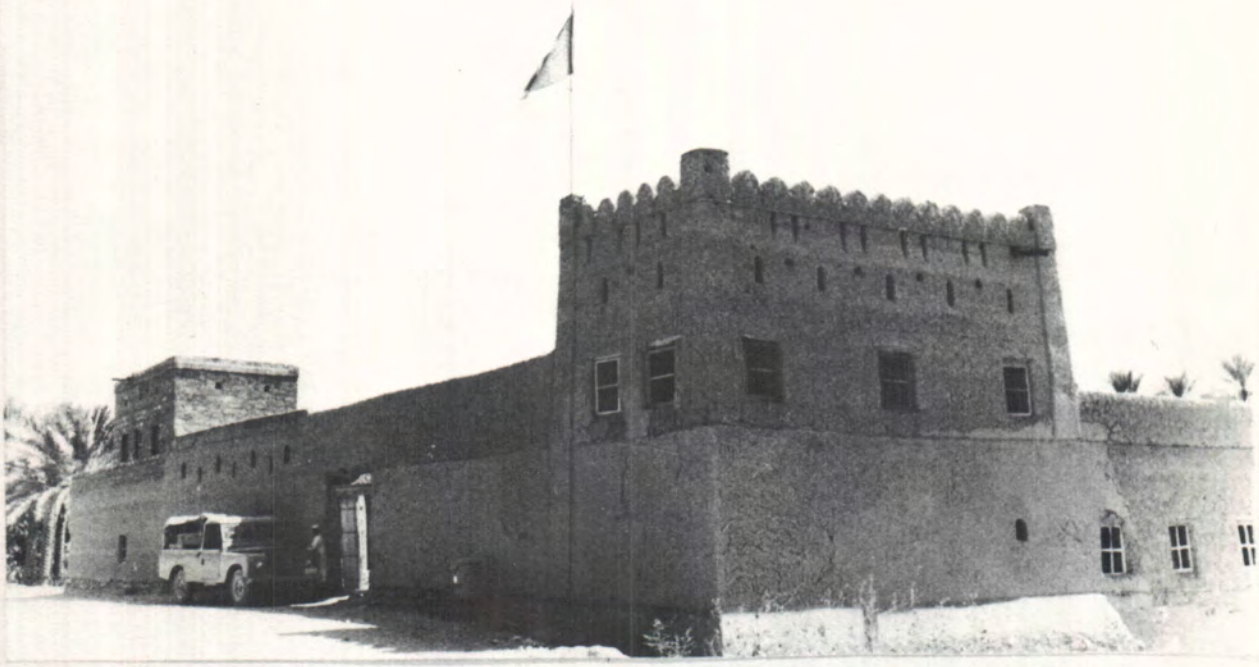
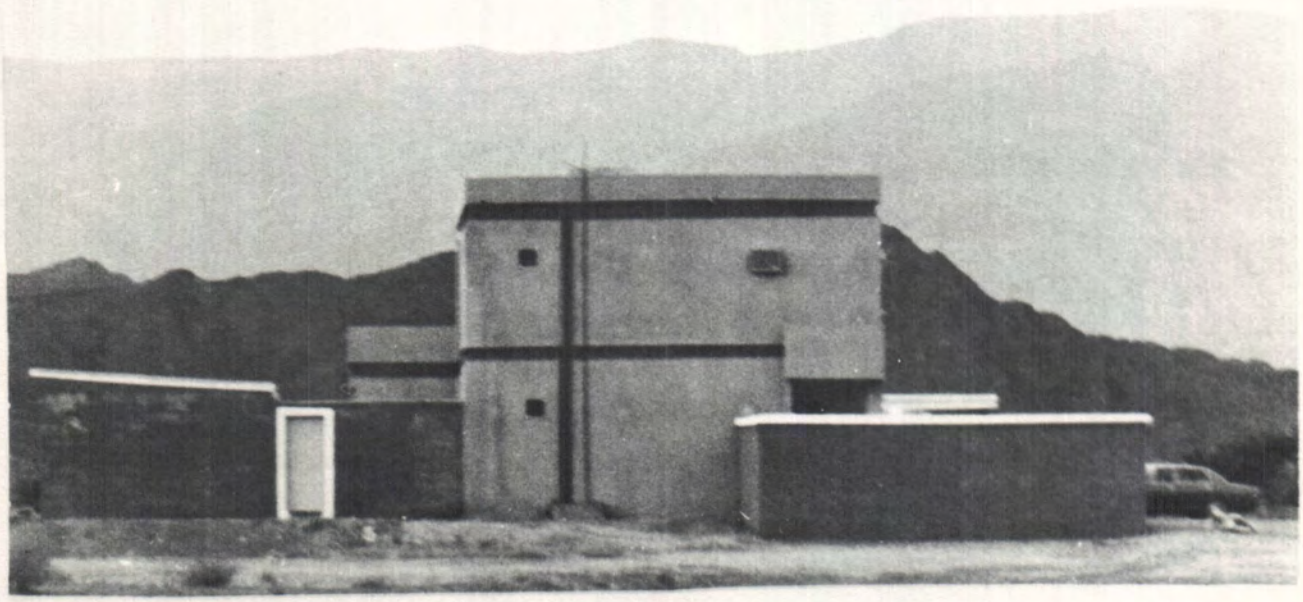
Fig. 102



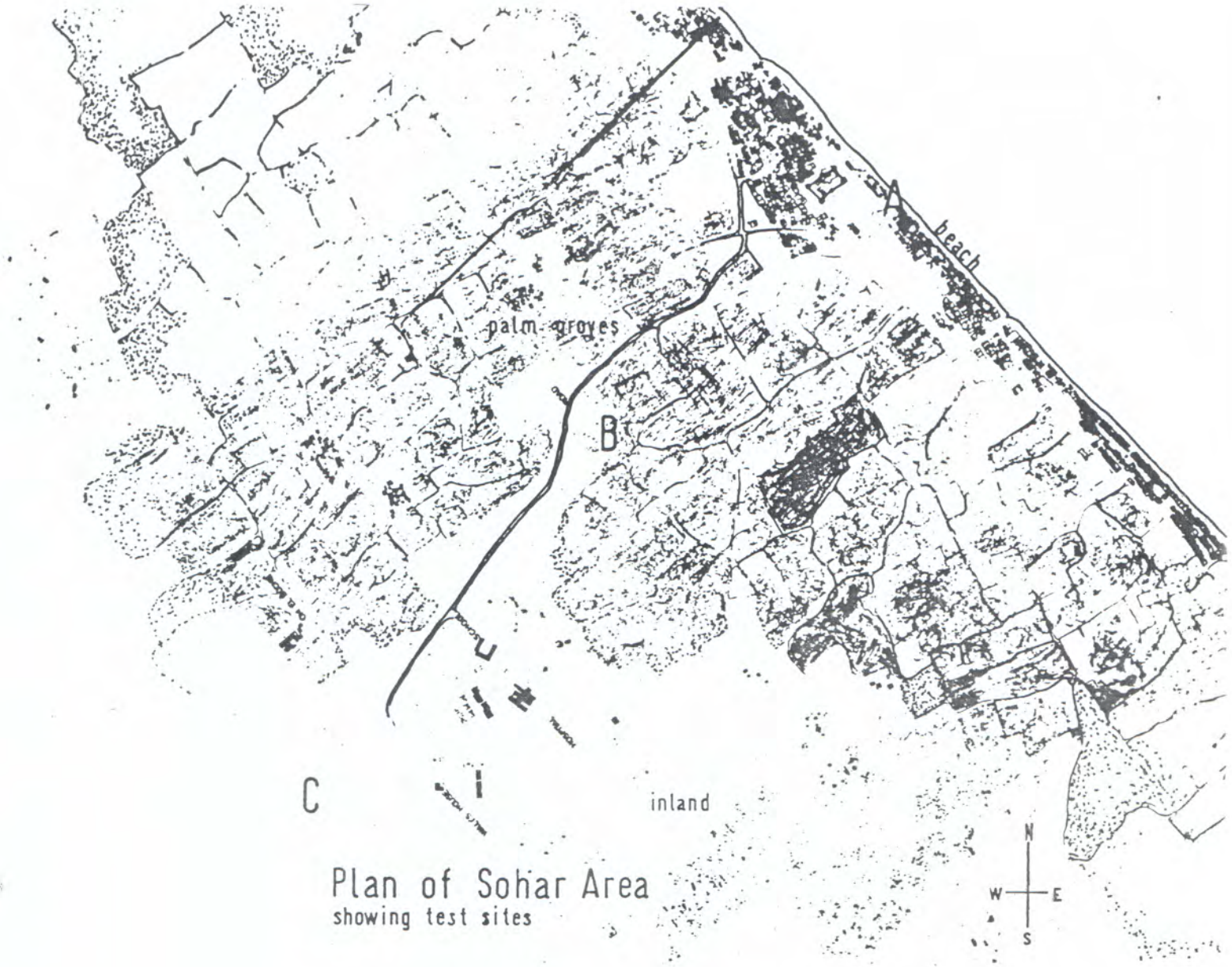
Indiginous Rural Housing in Muladah



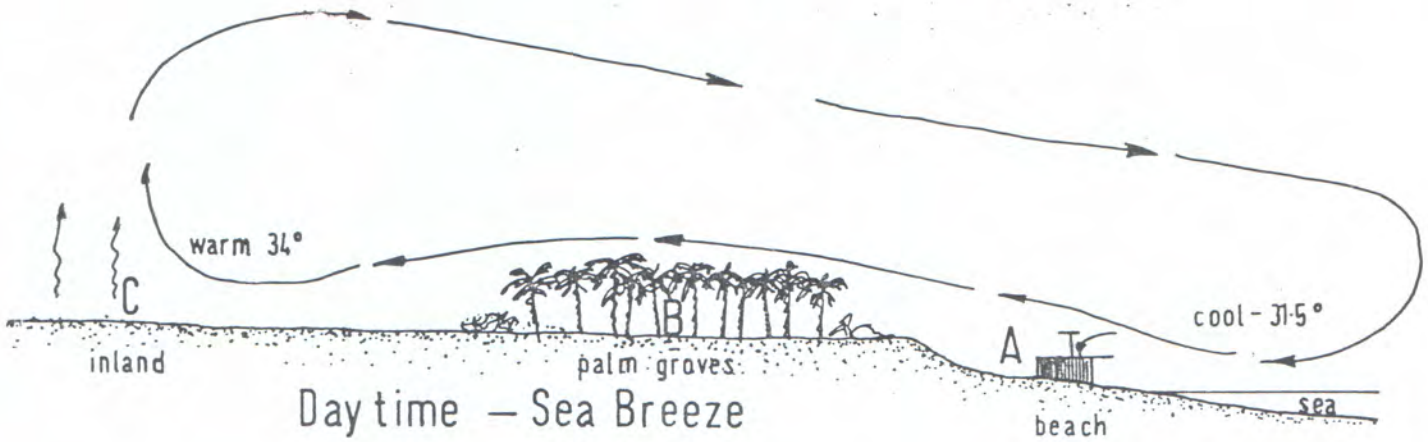
Wali's House and Headquarters in Iski.



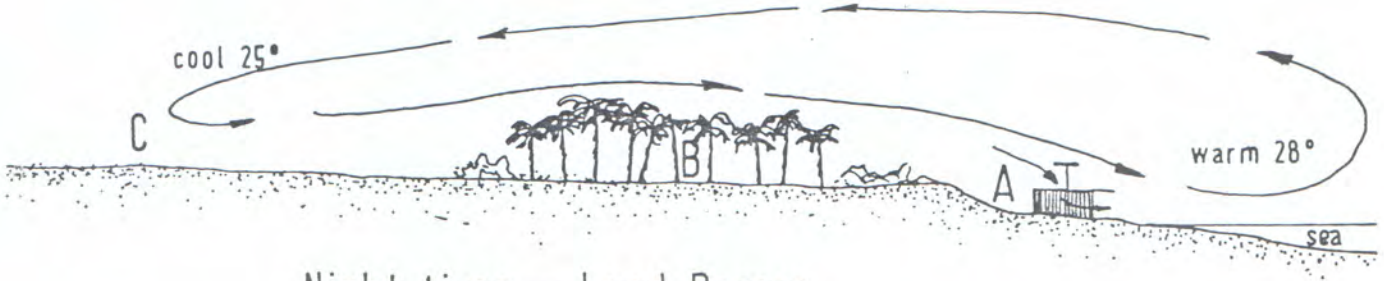
Recent building, such as Wali's house in Nizwa, set new models and new aspirations



Plan of Sohar Area
showing test sites



Day time – Sea Breeze



Night time – Land Breeze

FIG 305

MICRO – CLIMATIC COMPARISON SOHAR

BEACH FRONT – PLANTED BELT – INLAND

SEPTEMBER 22÷23, 1973

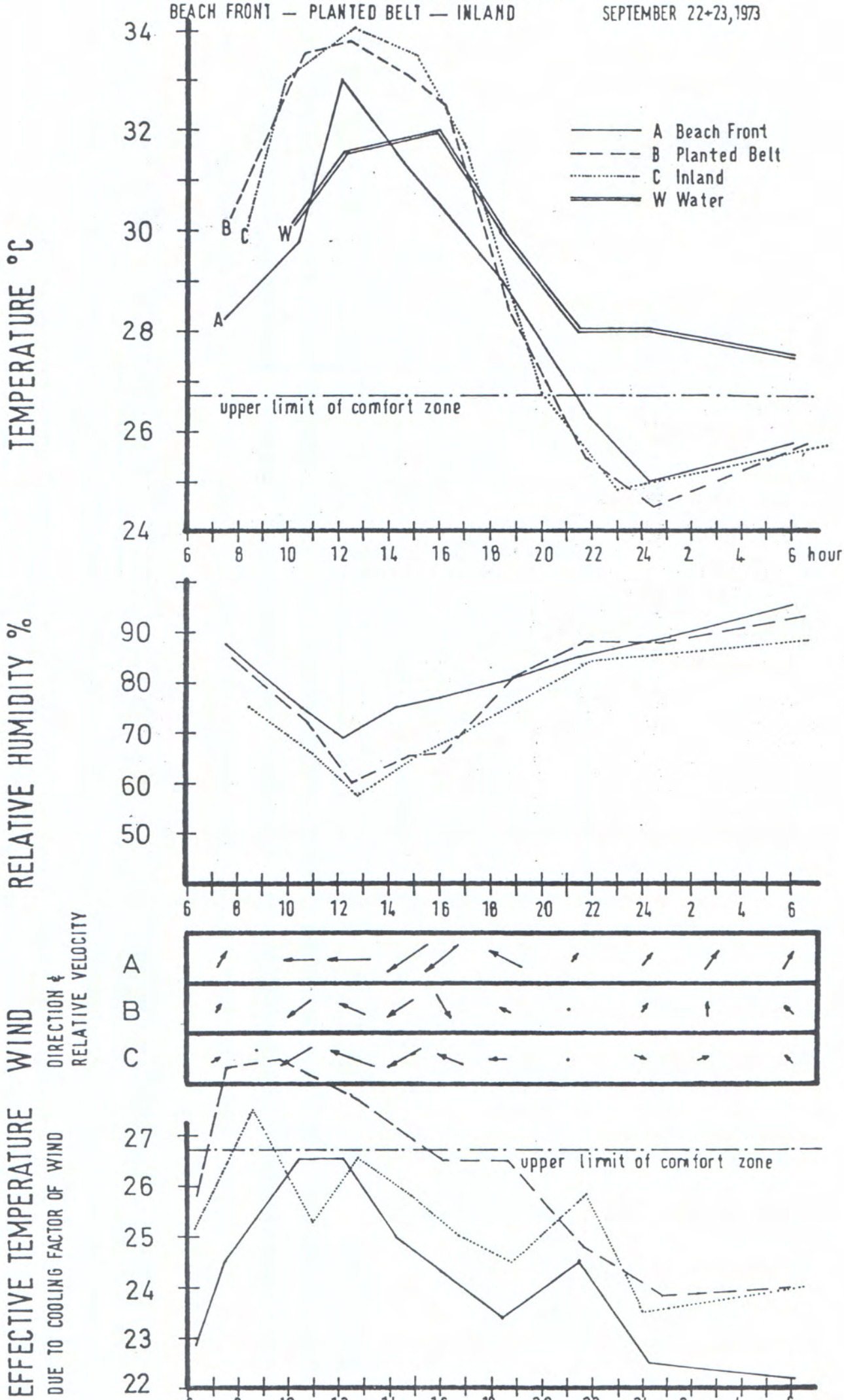


Fig 3.14

Barasti house at Om El Boche showing addition of barasti screen for winter conditions.
a before addition
b after addition

a.

b

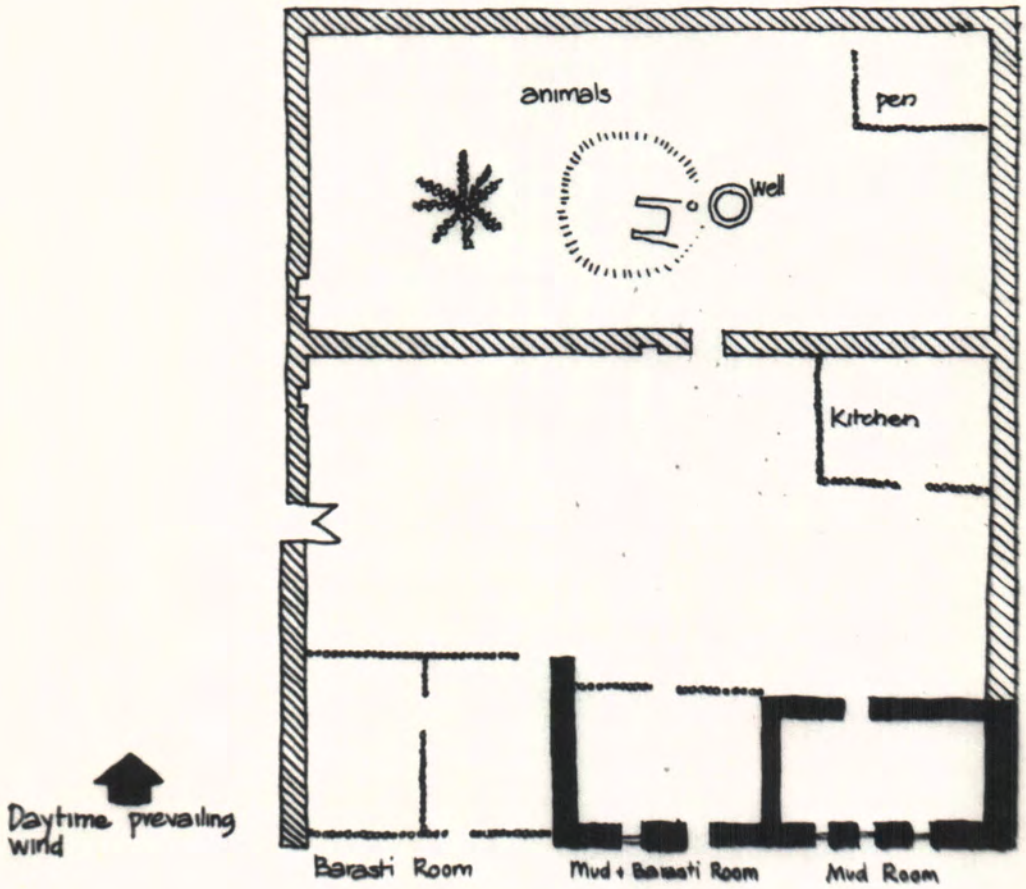


Fig 3.15 House at Maladah showing different rooms used for different seasons

Fig 3·19 Winter Village Falaj al Qabael
Note mud brick houses and added matting on barasti roof.

Fig. 3·20 Summer settlement in date garden area.

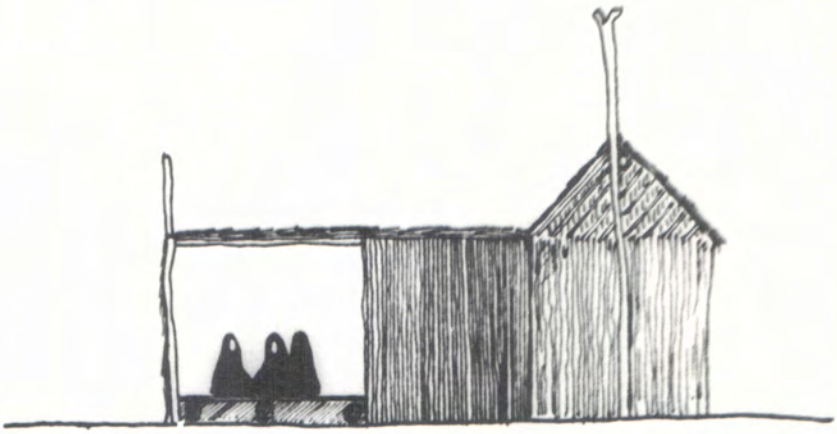
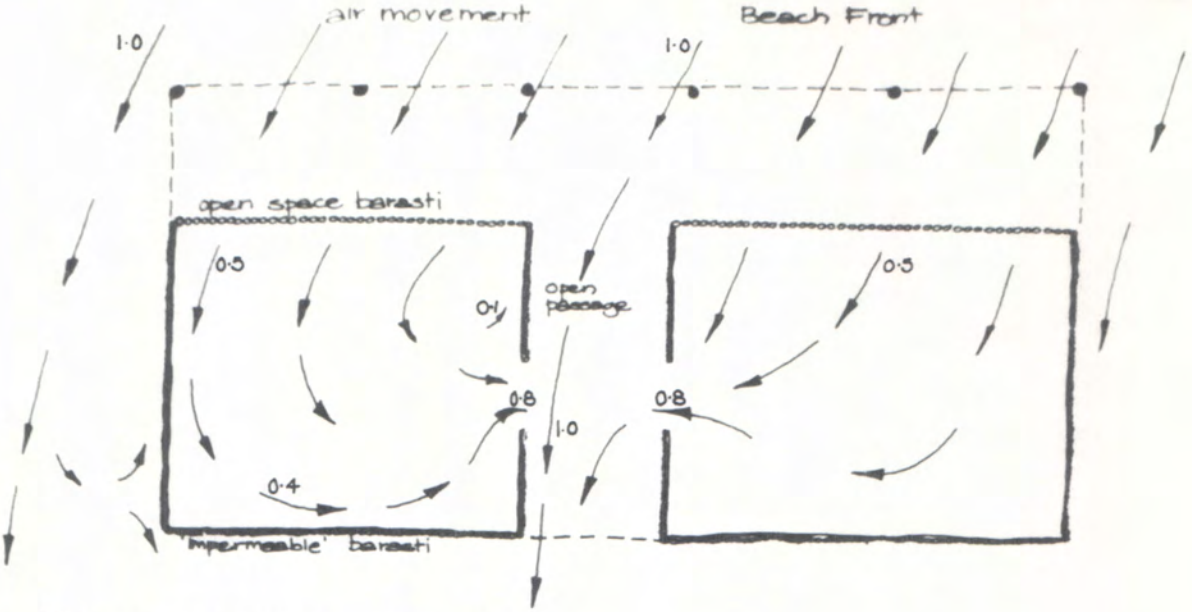
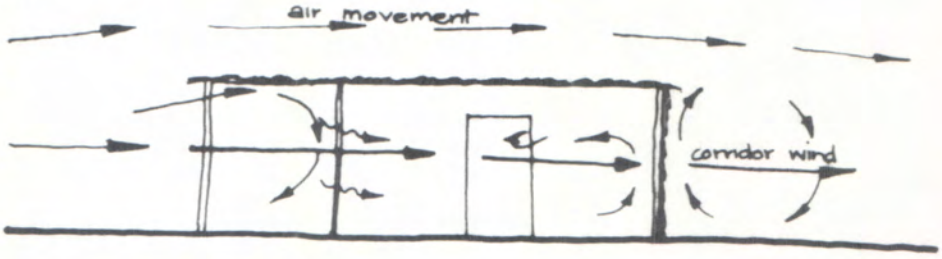


Fig 3·21 Section of barasti house showing shelter allowing free air movement through it.



Plan of passage way house
Fig. 3·22



Section
Fig. 3·23

Fig. 3·24

Fig 3·25

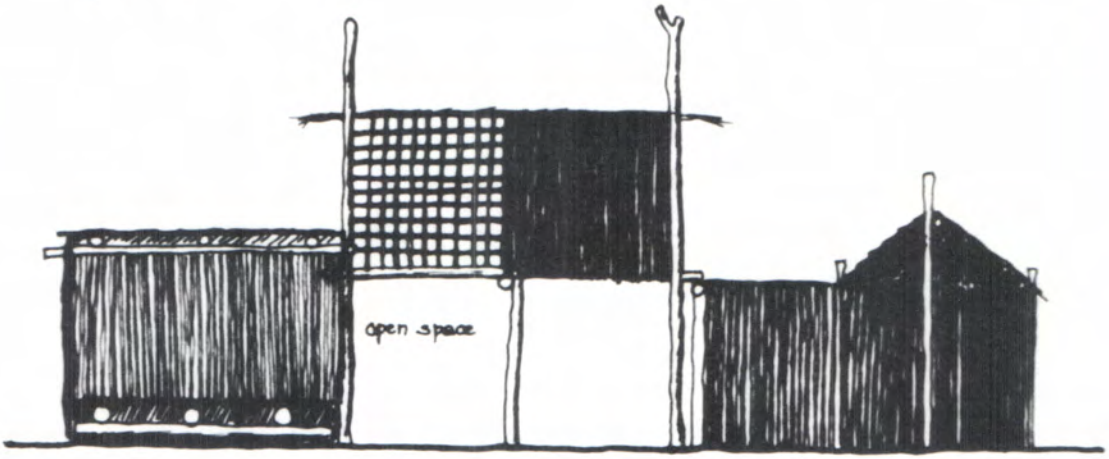
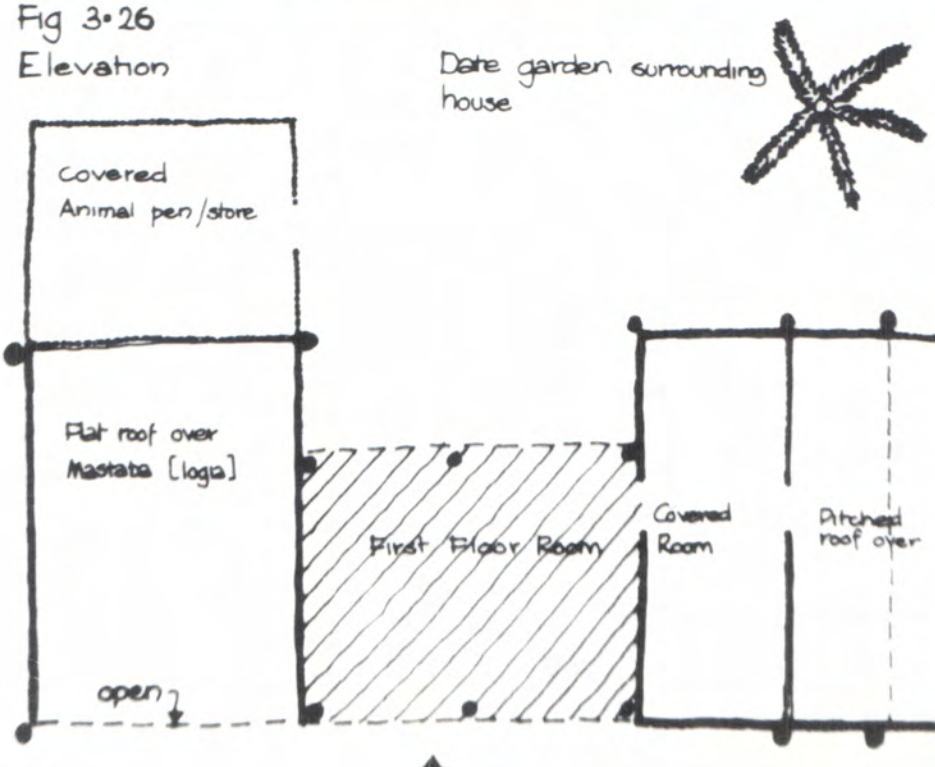


Fig 3·26
Elevation



Plan
Fig 3·27 Two storey barasti house at Musama'a

Fig. 834
The basic roof structure
is pre assembled
on the ground

Fig. 835
The roof is post tensioned
and tied when in place

Fig. 929 Cooking Areas

Raised platforms are often used for storing food. The introduction of insect and rodent guards would be an improvement.

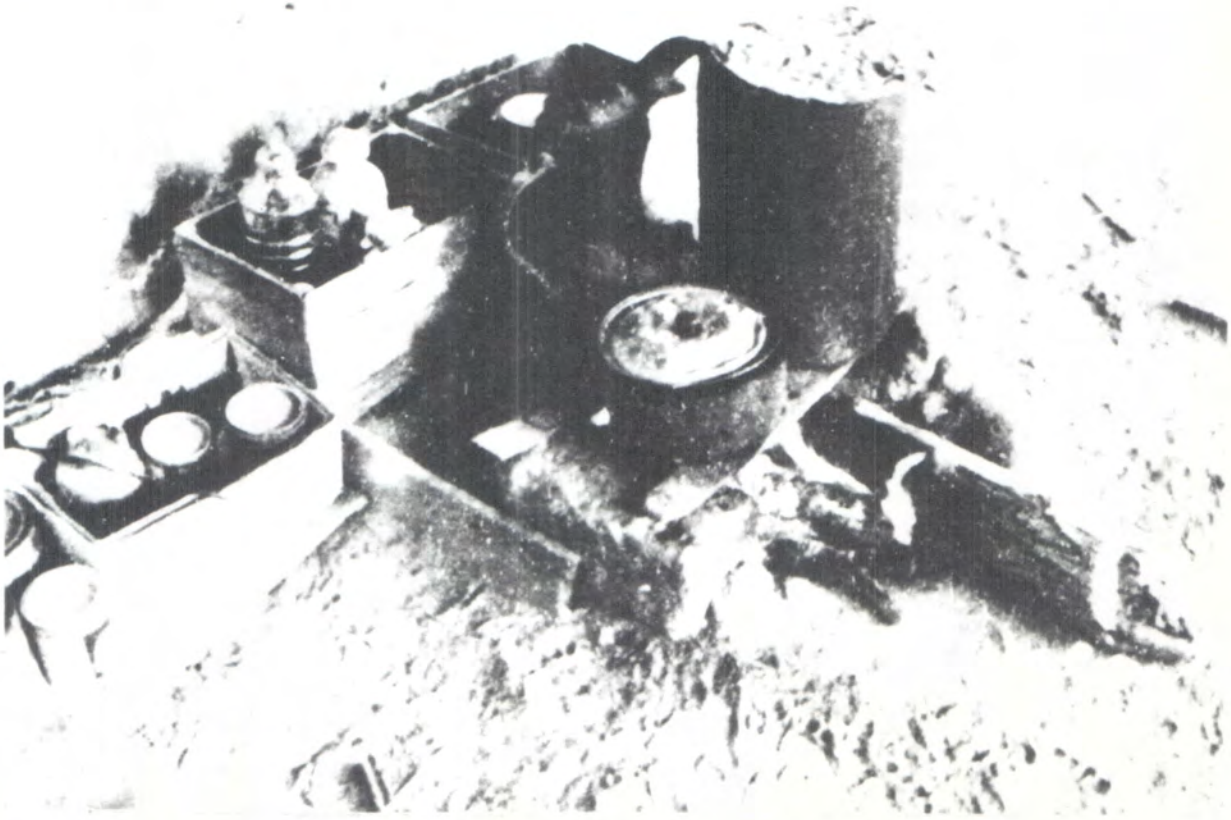


Fig. 930 Typical facilities for cooking in existing rural houses.

Barasti house using mud to stabilize openings

Detail showing mud plaster on a barasti wall

Interior of mud plastered barasti house

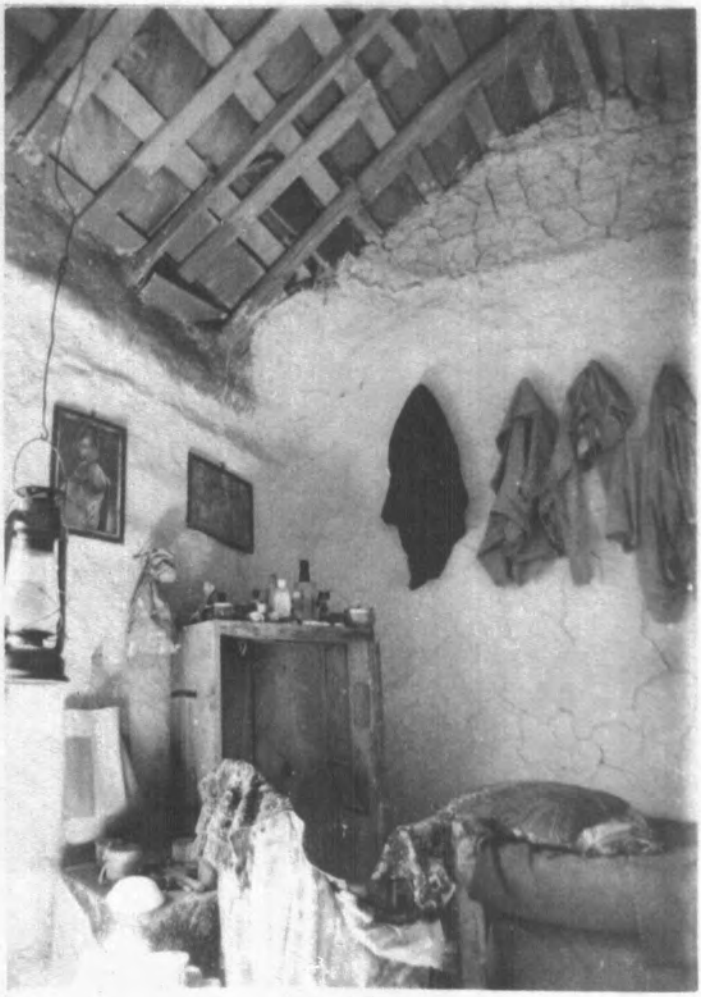
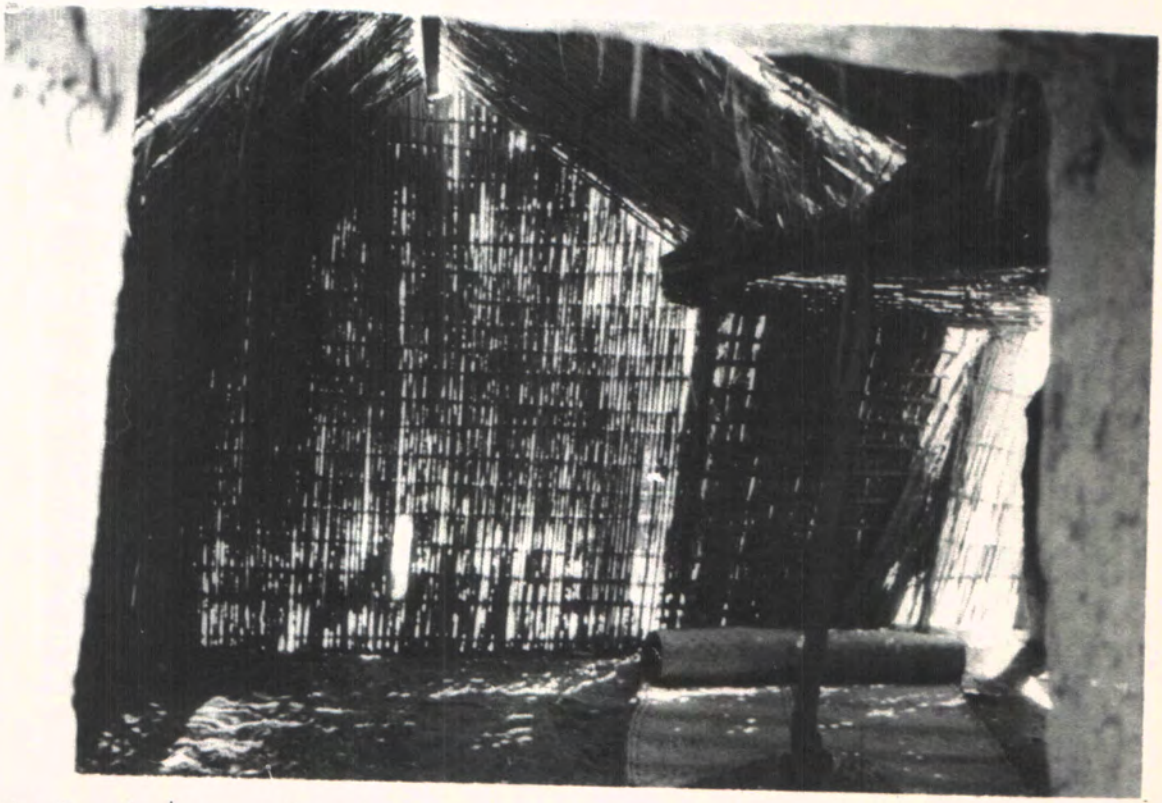


Fig 3·19 Winter Village Falaj al Qabael
Note mud brick houses and added matting on barasti roof.

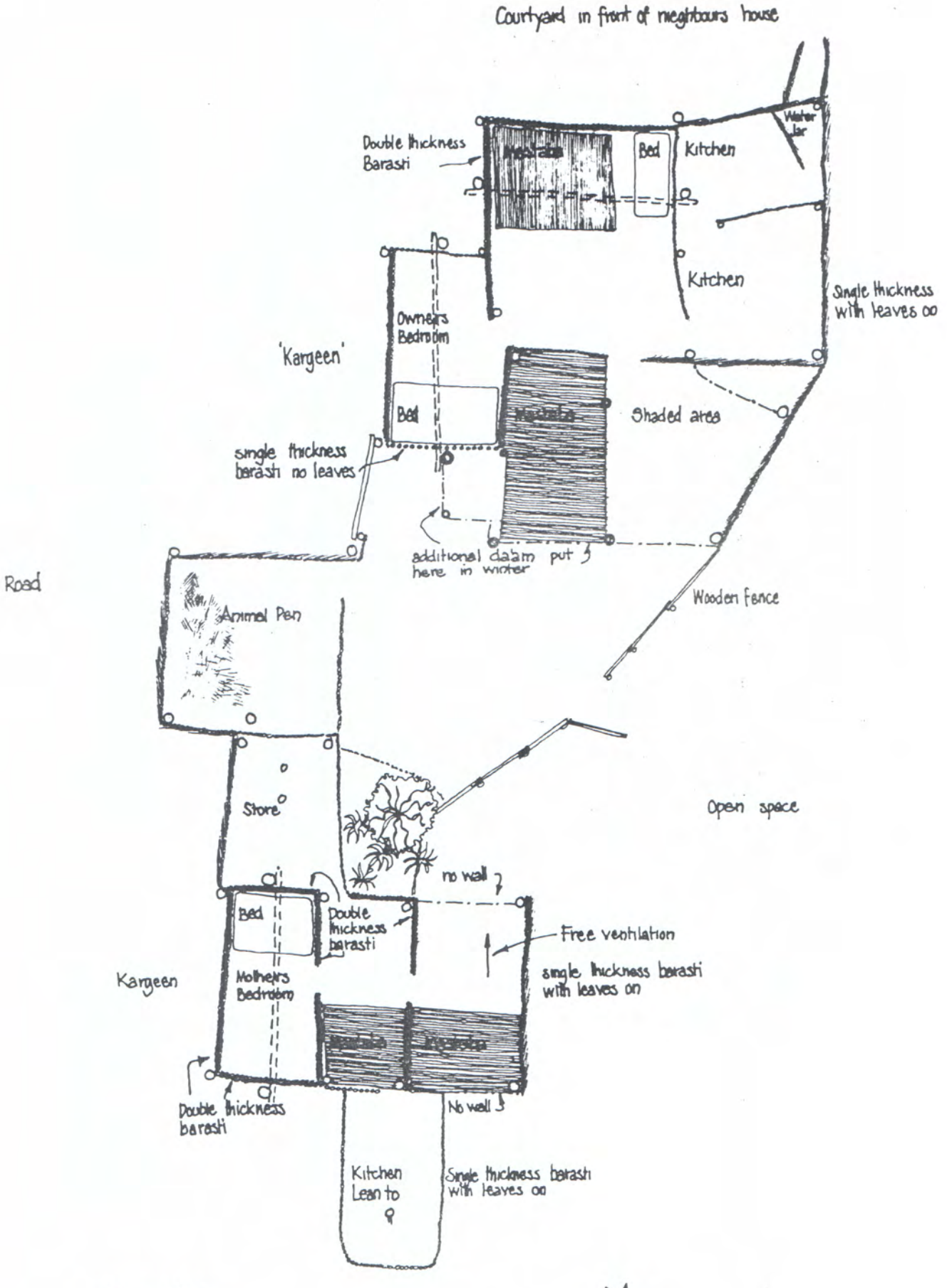
Fig. 3·20 Summer settlement in date garden area.

Exterior view of pitched roof rooms [Kargeen]



Interior of basic pitched roof room

Fig. 350 Pitched roof room



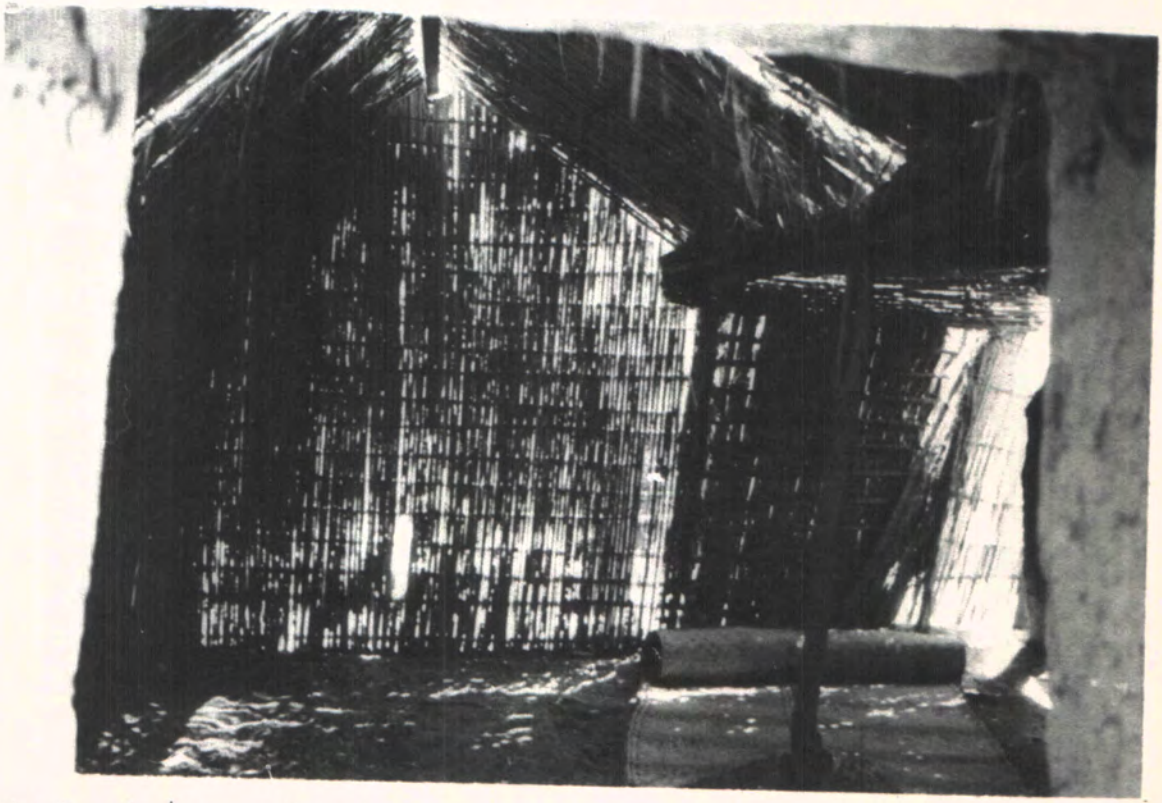
Floor Plan

Fig 3.59 Barasti house ~ Salem Ben Abdullah ~ Om el Boche Wilaya of Sohar

Fig. 834
The basic roof structure
is pre assembled
on the ground

Fig. 835
The roof is post tensioned
and tied when in place

Exterior view of pitched roof rooms [Kargeen]

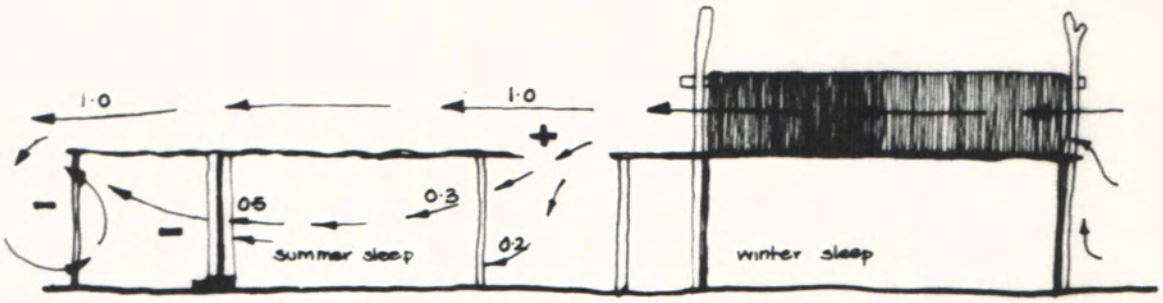


Interior of basic pitched roof room

Fig. 350 Pitched roof room

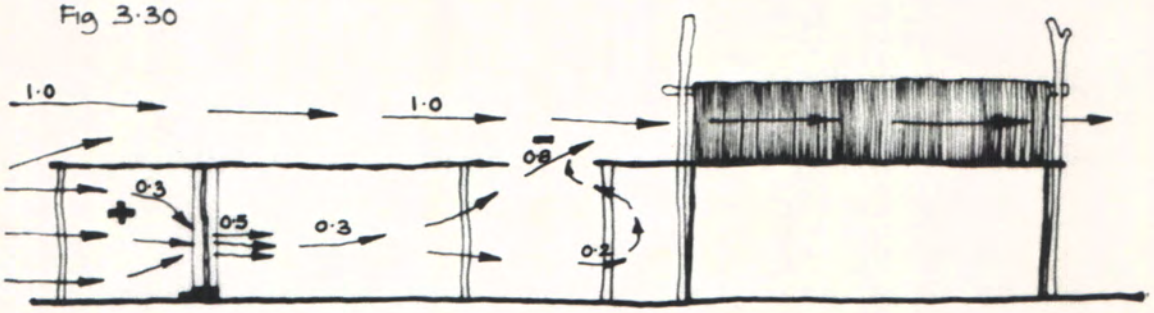
Fig. 834
The basic roof structure
is pre assembled
on the ground

Fig. 835
The roof is post tensioned
and tied when in place



air movement at night

Fig 3·30



air movement in the day

Fig 3·31

House of Moh'd Abdullah. Beach Front ~ Sohar. Sections

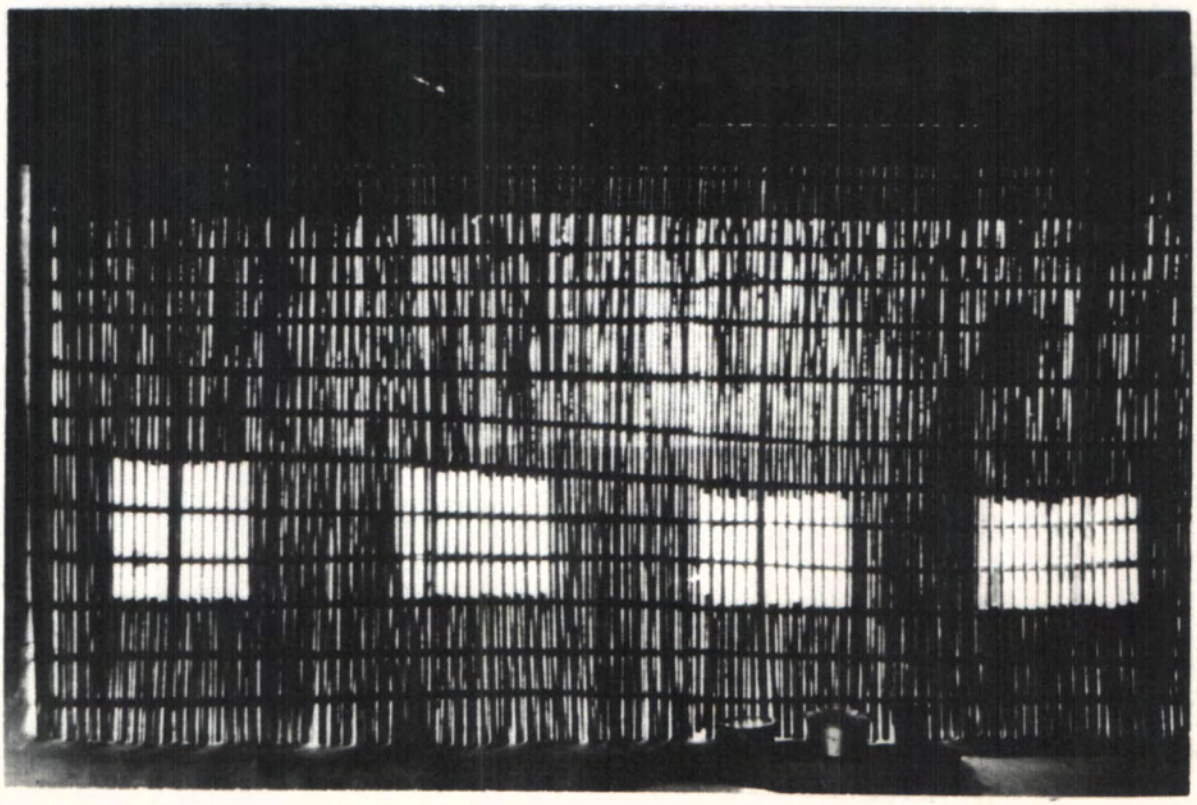
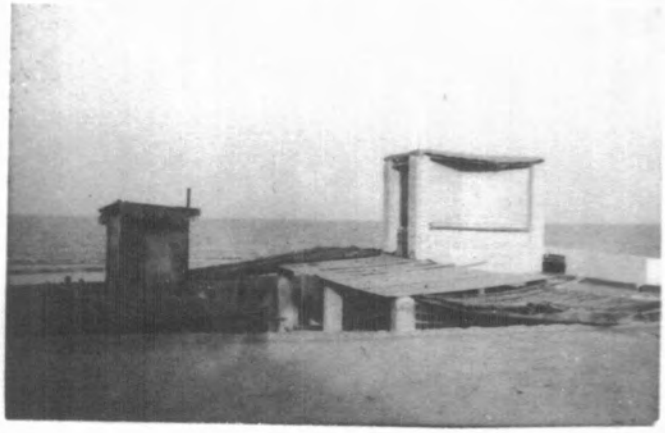


Fig 3·32

Fig 3·39

Plastered Badgir and cloth Badgir at Sohar

View from other side



Cloth Badgir in use

Cloth Badgir framework after adaptation to winter use.

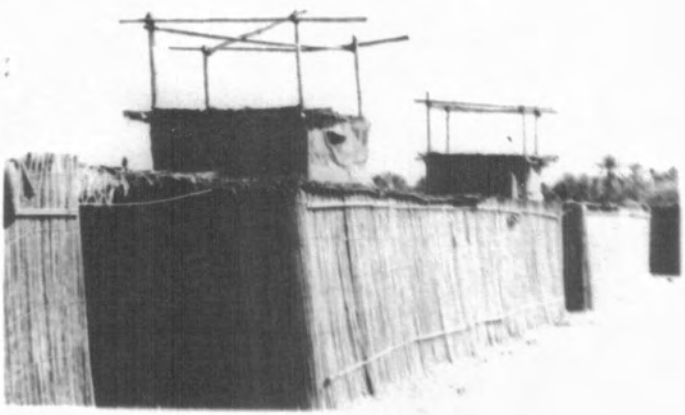
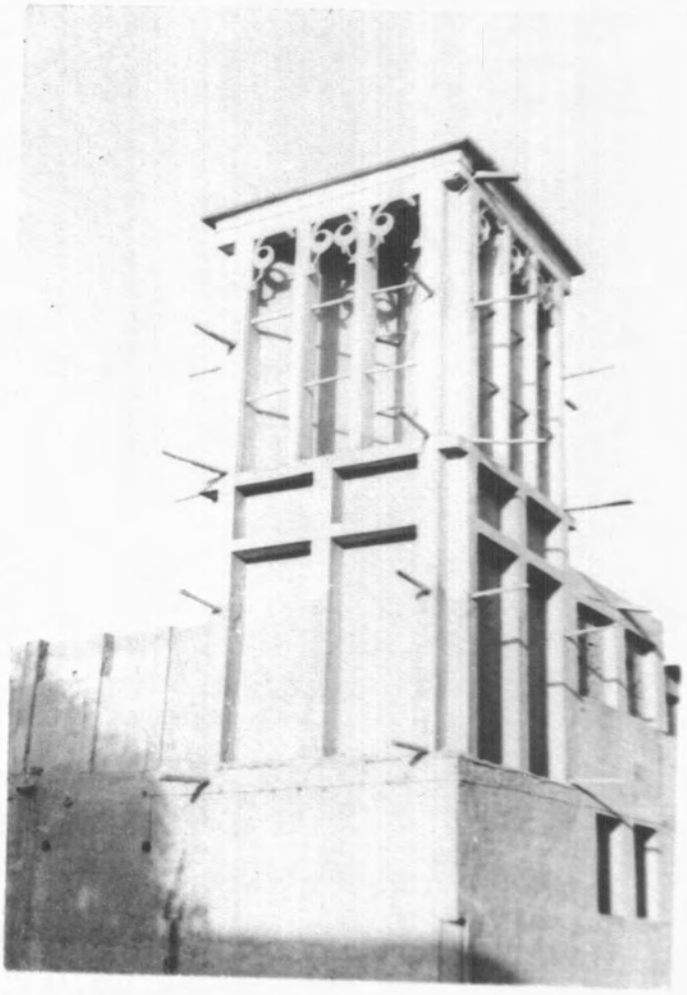


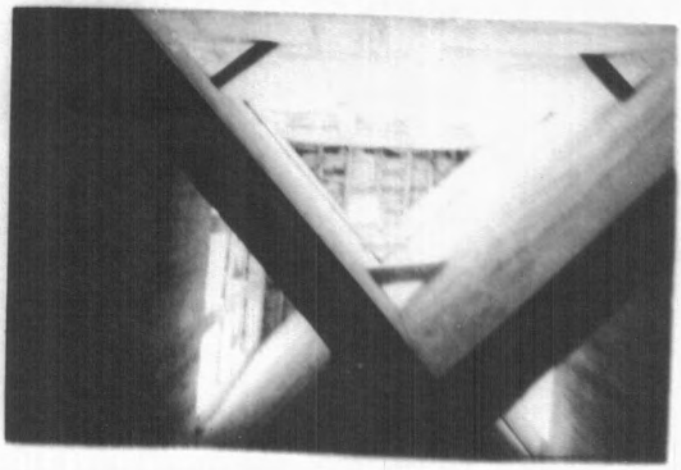
Fig 3.40

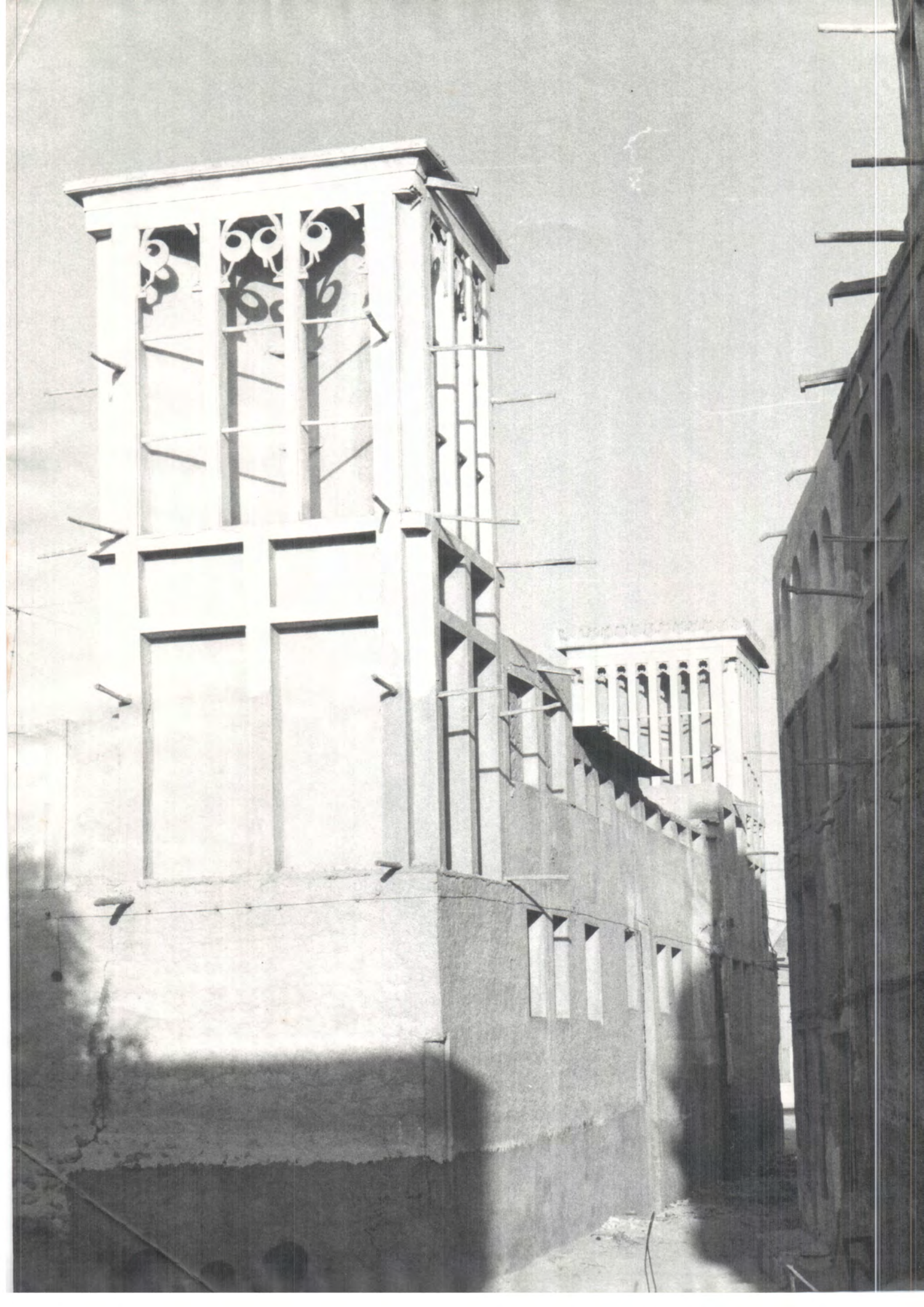
Bastakia area of Dubai with Badgir

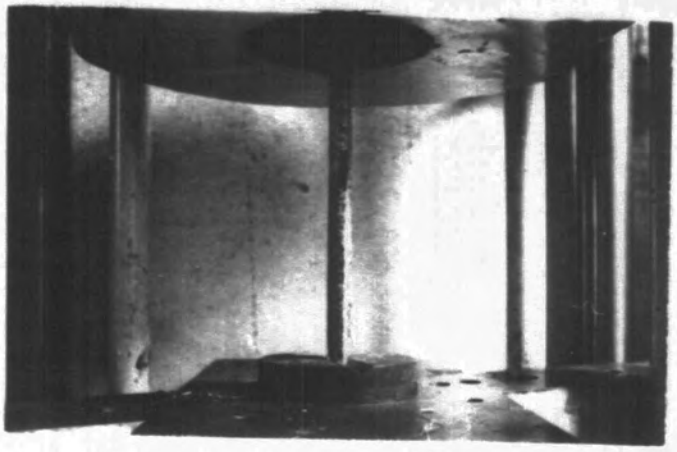
Dubai Badgir



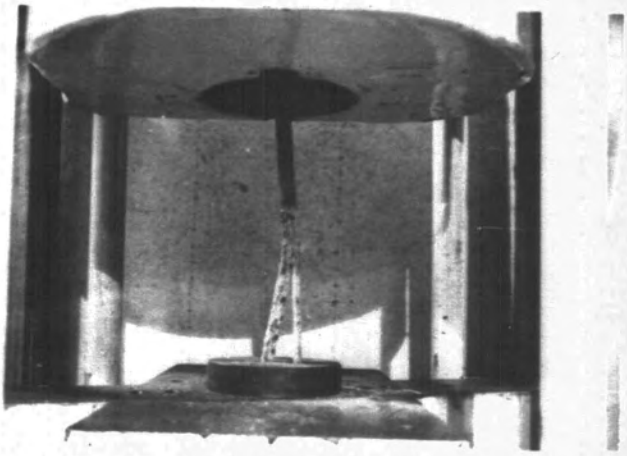
View up Badgir shaft showing divisions



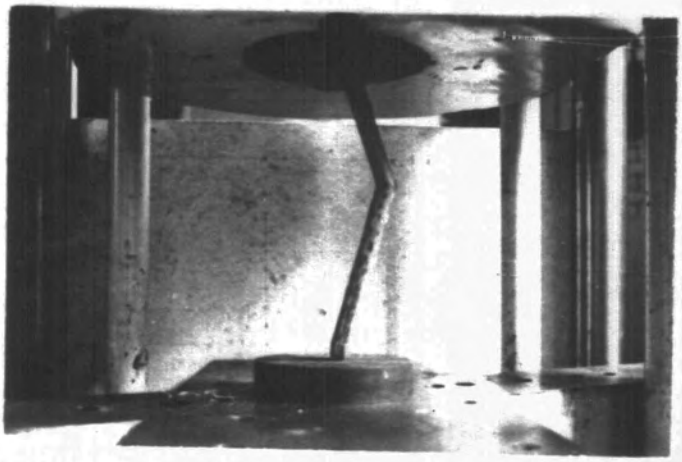




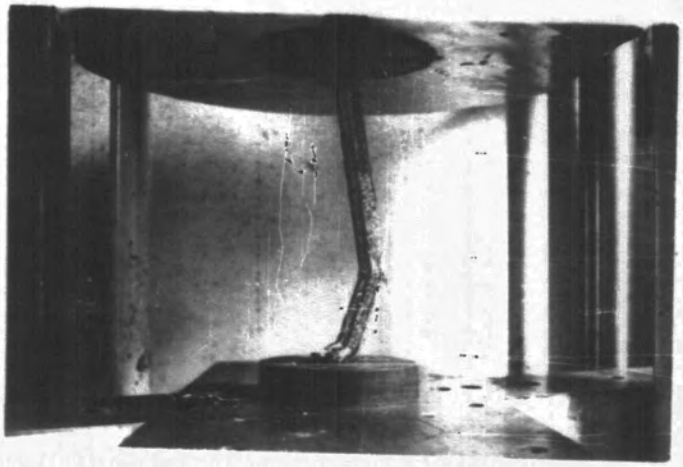
Stem before compression



Thin end under compression
Note split failure



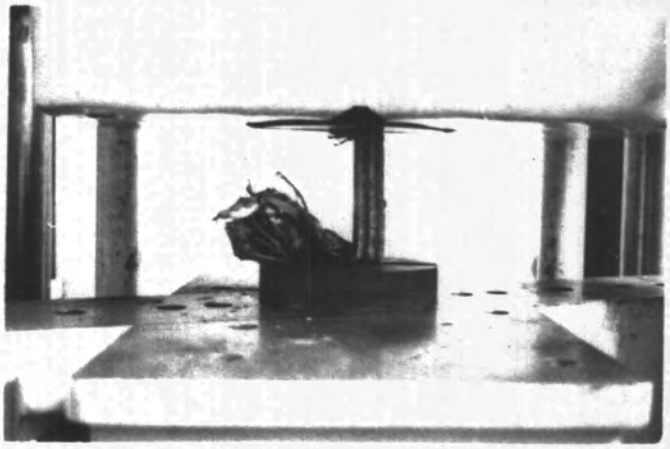
Center section under compression



Thick end under compression

Fig 345 Compression tests

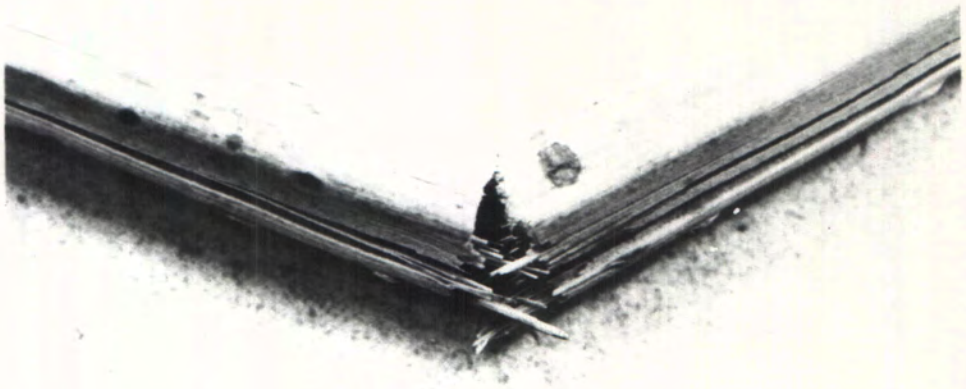
Wet barasti under enitial loading



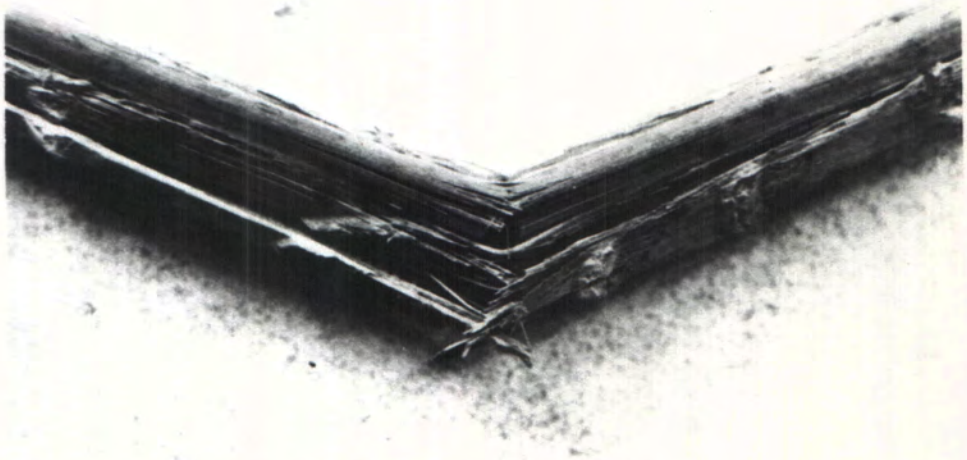
Wet barasti compressed to half its length showing shredded fibre

Detail of compressed fibre showing breakdown of fibres

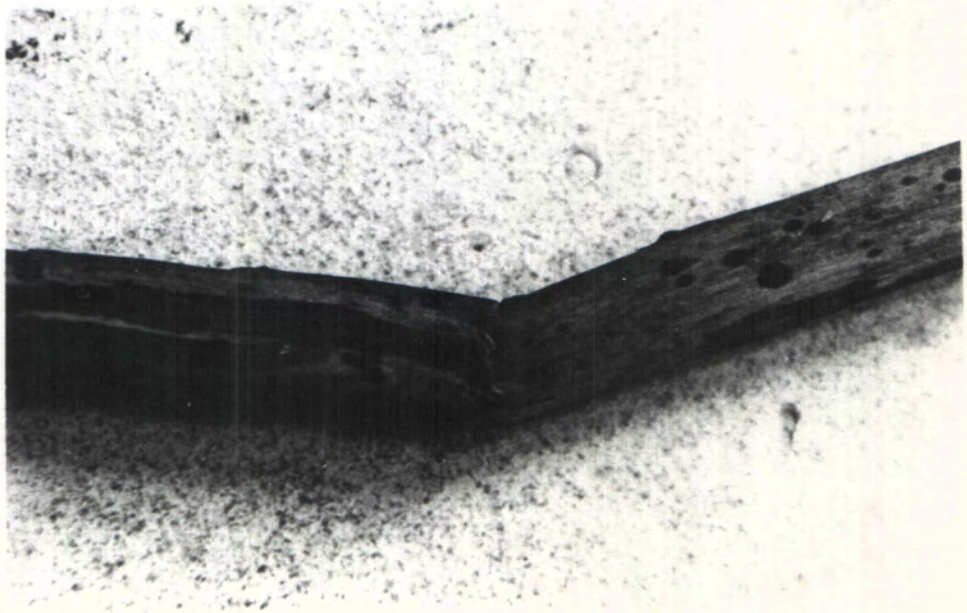
Fig 346



Clean fracture at thick end of stem



Splintered fracture at thin end of stem



Folded failure of wet stem

Fig. 348
Behaviour under loading

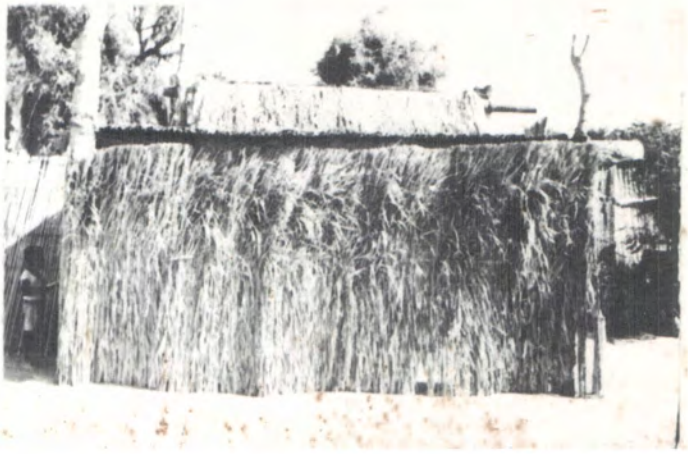


Fig 355
Plain screen with leaves on

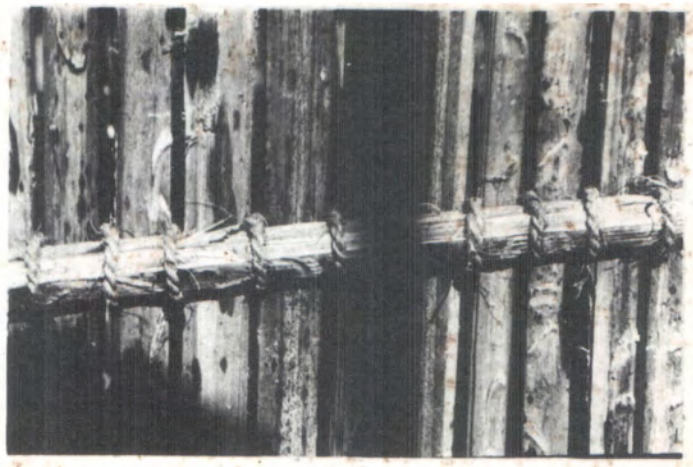


Fig 356
Stems with no leaves on

Fig 357
Double skin with leaves on

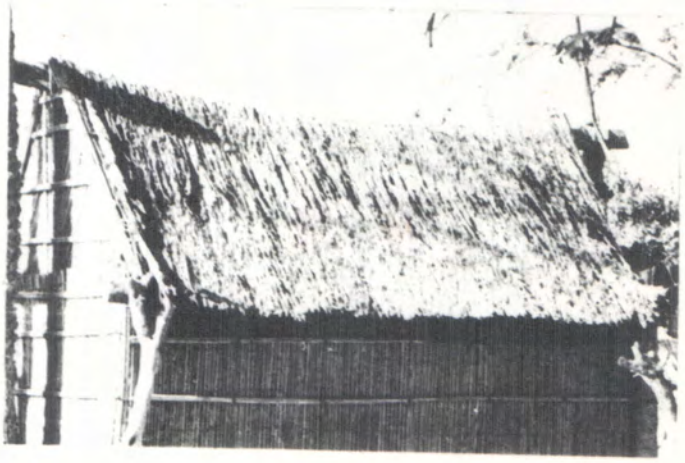
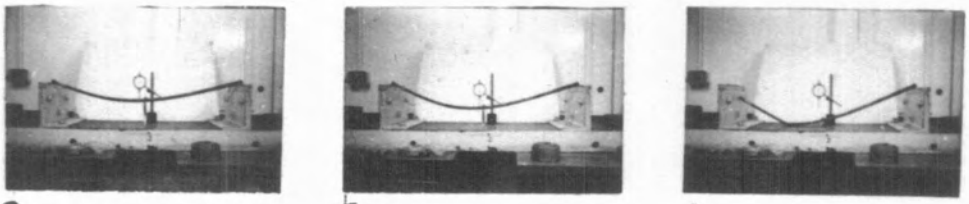


Fig 358
Roof panel

thin thick

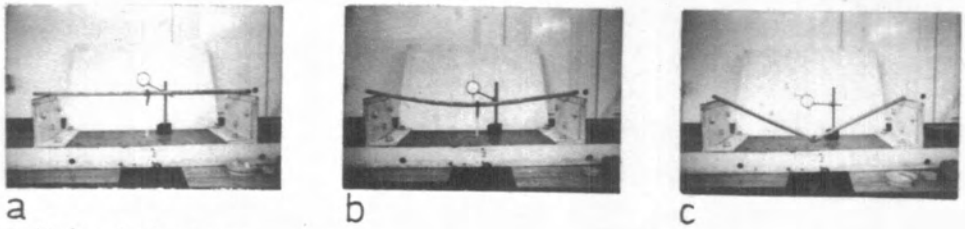


a b c

a. Stem under enitial loading.
b. Nearing failure.
c. Broken stem.

THIN END OF STEM

thin thick

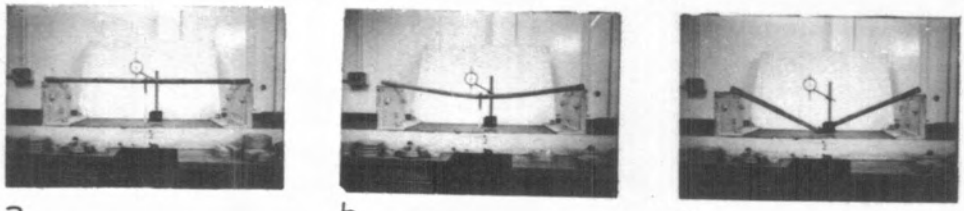


a b c

a Unloaded stem.
b Loaded stem.
c Broken stem.

CENTRAL PART OF STEM

thin thick



a b c

a Unloaded stem.
b Loaded stem.
c Broken stem.

THICK END OF STEM

Fig 349 Behaviour under loading

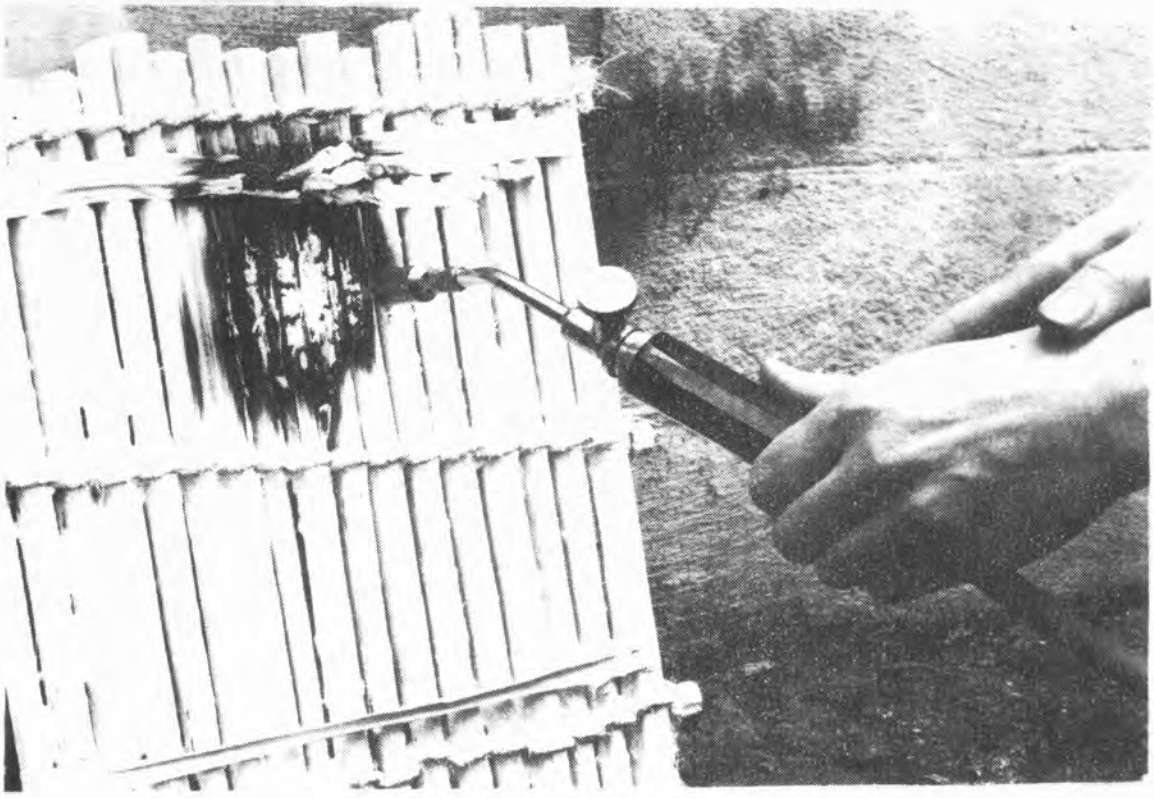


Fig 384 Fire test on barasti panel protected by fire retardant paint

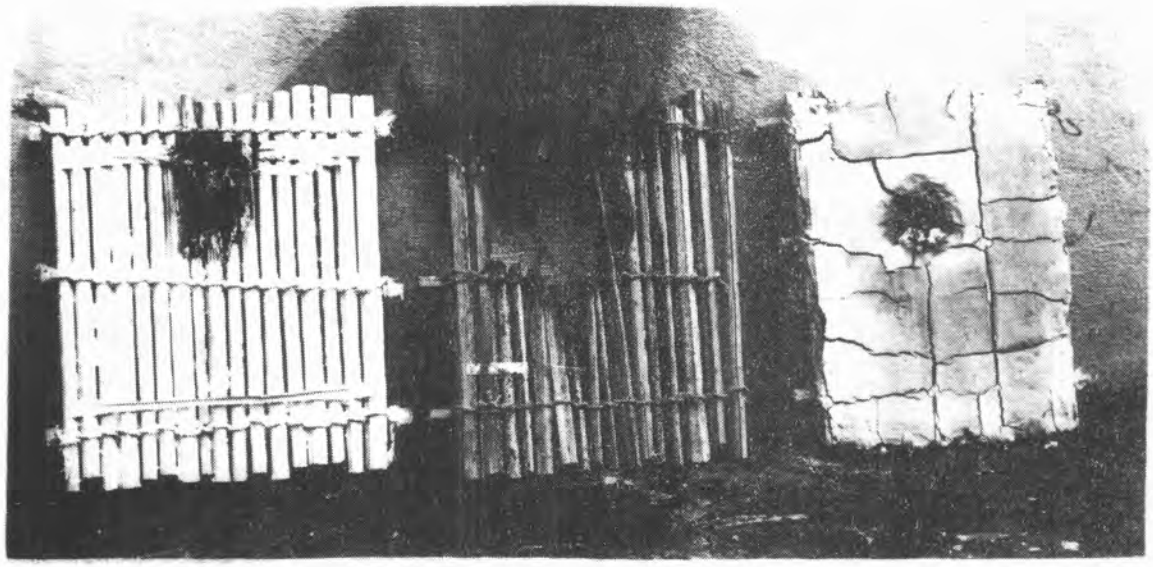


Fig 385 Panels after fire test:

protected by fire retardant paint	unprotected	protected by mud plaster
Time taken for panel to disintegrate		
4 mins	1¼ mins	18 mins

Fig 381 Post destroyed by termites

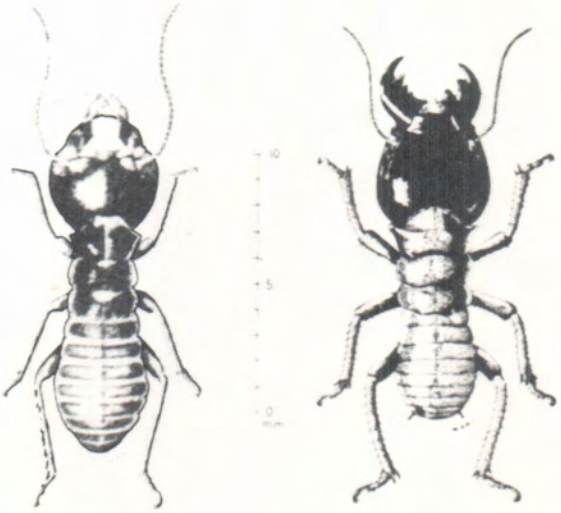


Fig 380 Termites

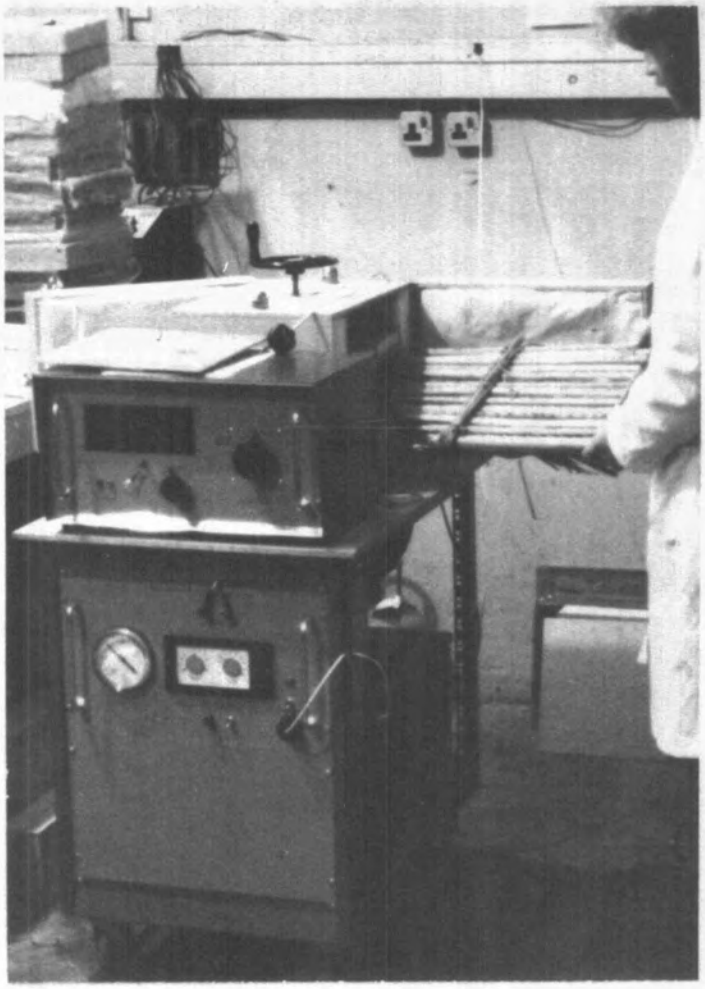


Fig 367
Apparatus used to evaluate the thermal conductivity of barasti panels

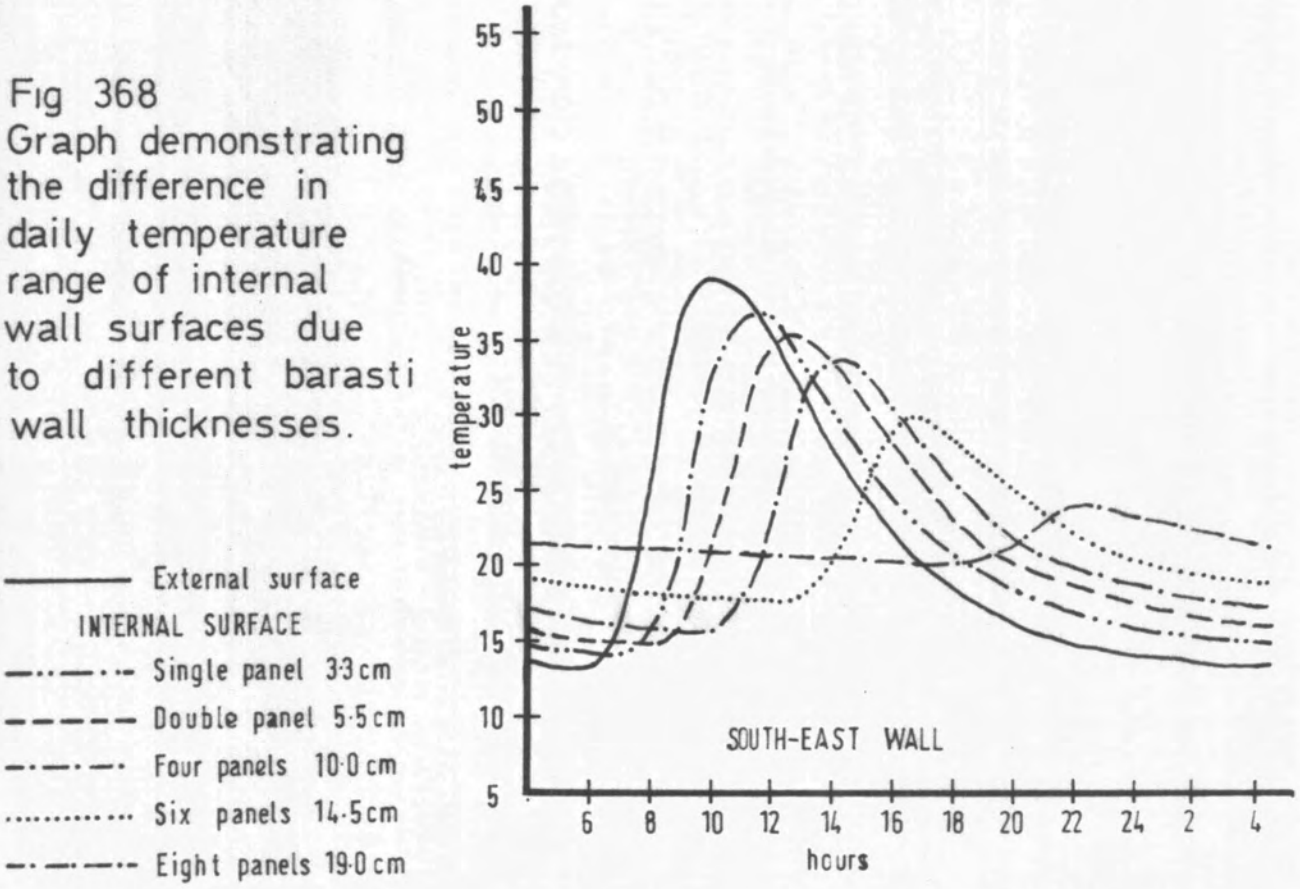


Fig 368
Graph demonstrating the difference in daily temperature range of internal wall surfaces due to different barasti wall thicknesses.

Fig. 410
Winter house in Nizwa

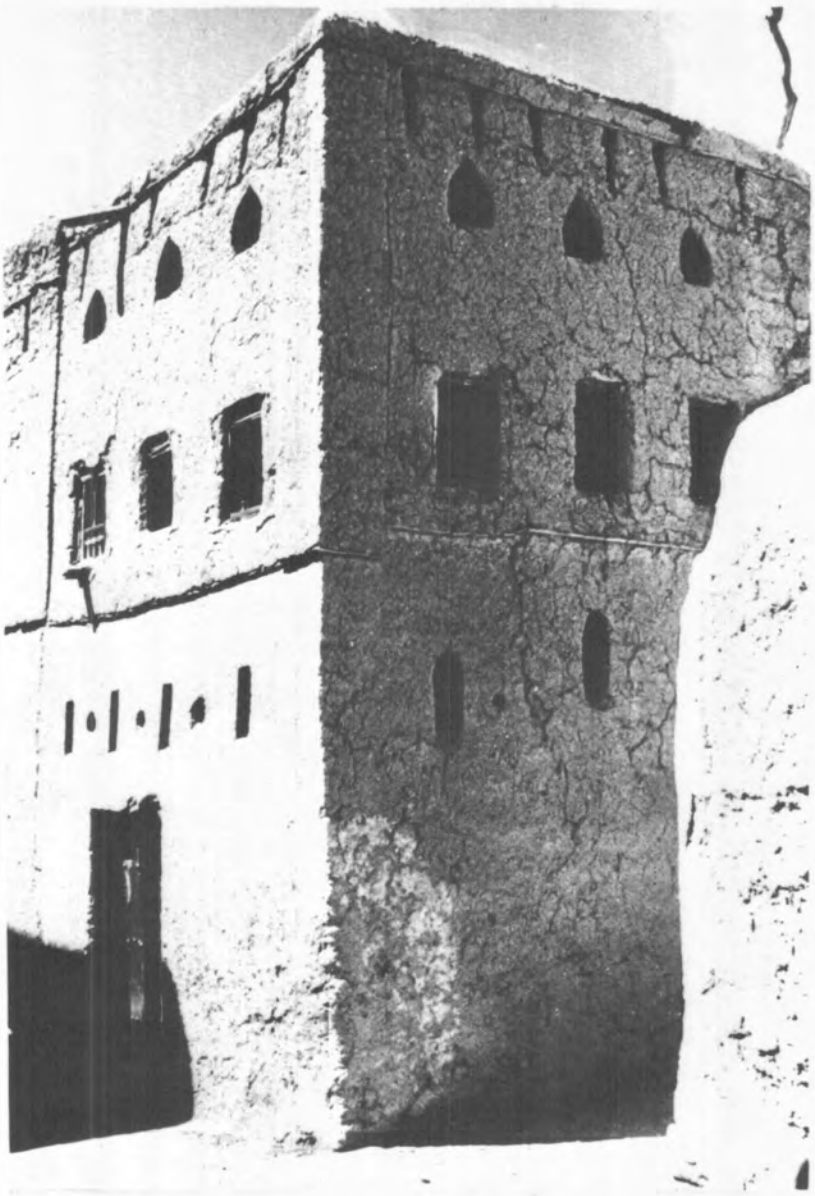


Fig 411
Summer house in date garden where micro-climate is more favourable

Fig 412

Limestone house

Schematic settlement plan of Odeya in the foothills near Izki. All houses are limestone unlike valley houses are predominantly mud brick.

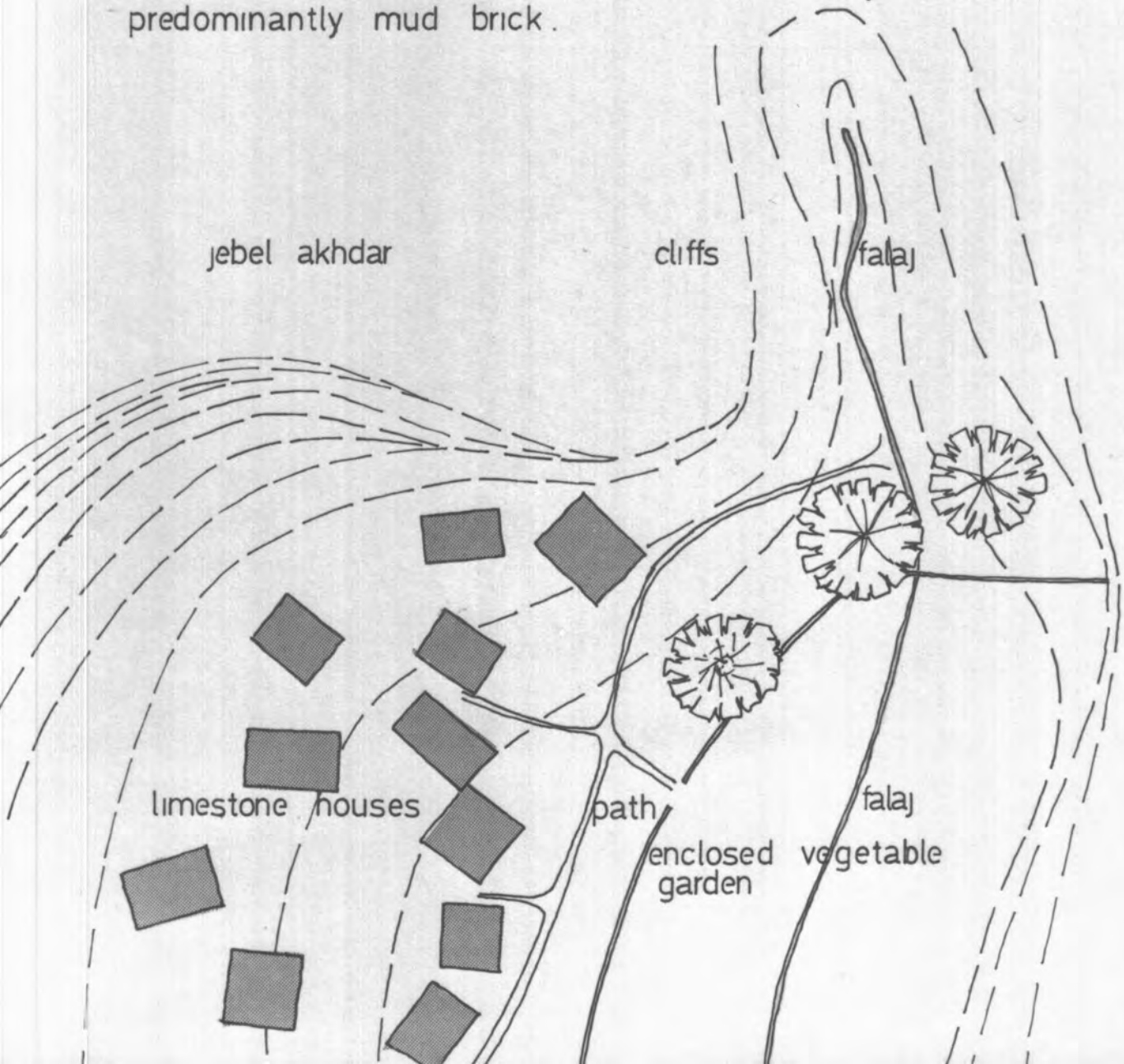
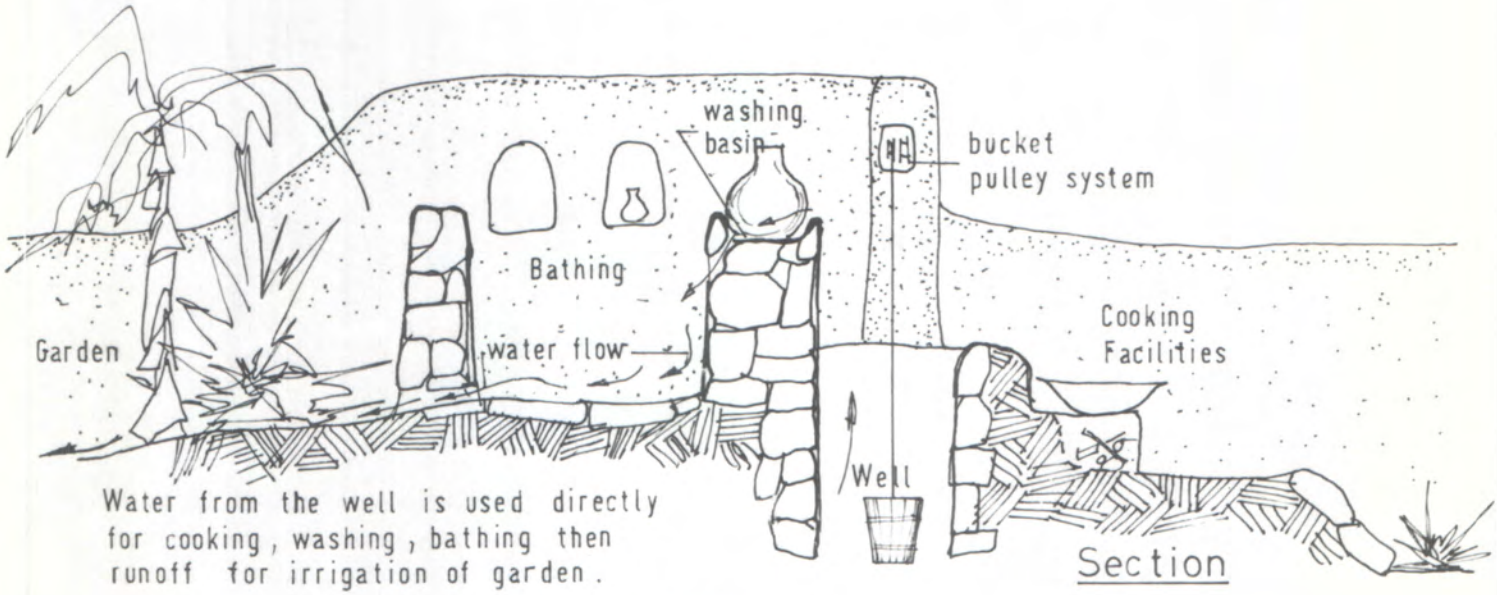


Fig. 927 Washing Facilities

Washing Area designed by Professor Hassan Fathy



Washing Area for Nizwa Summer House

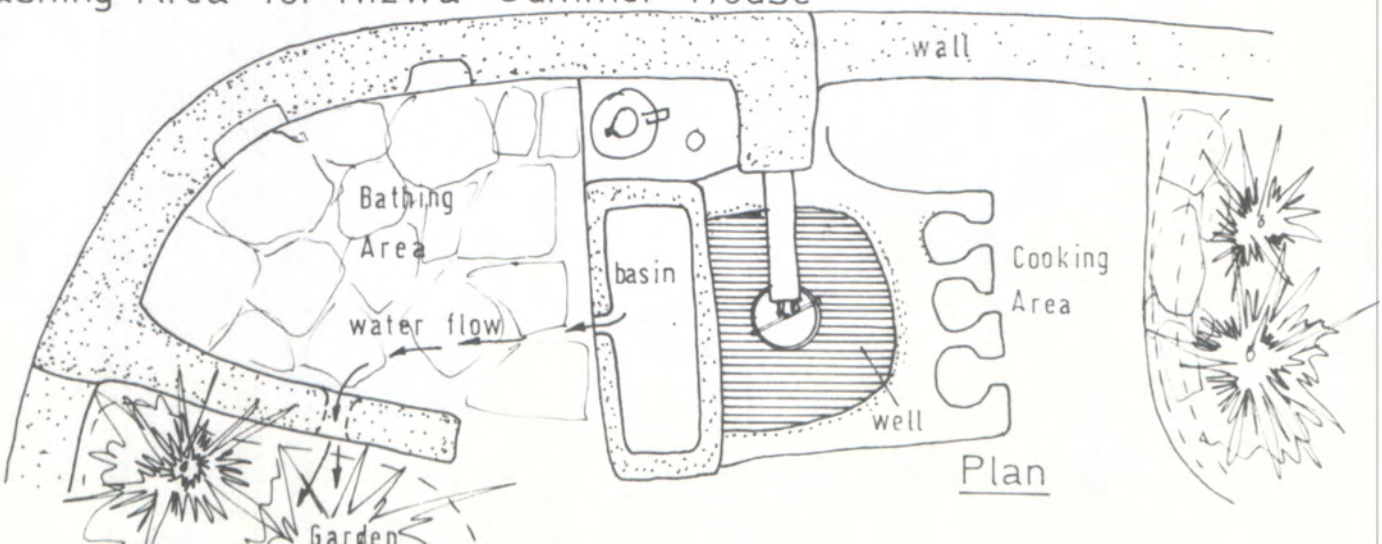
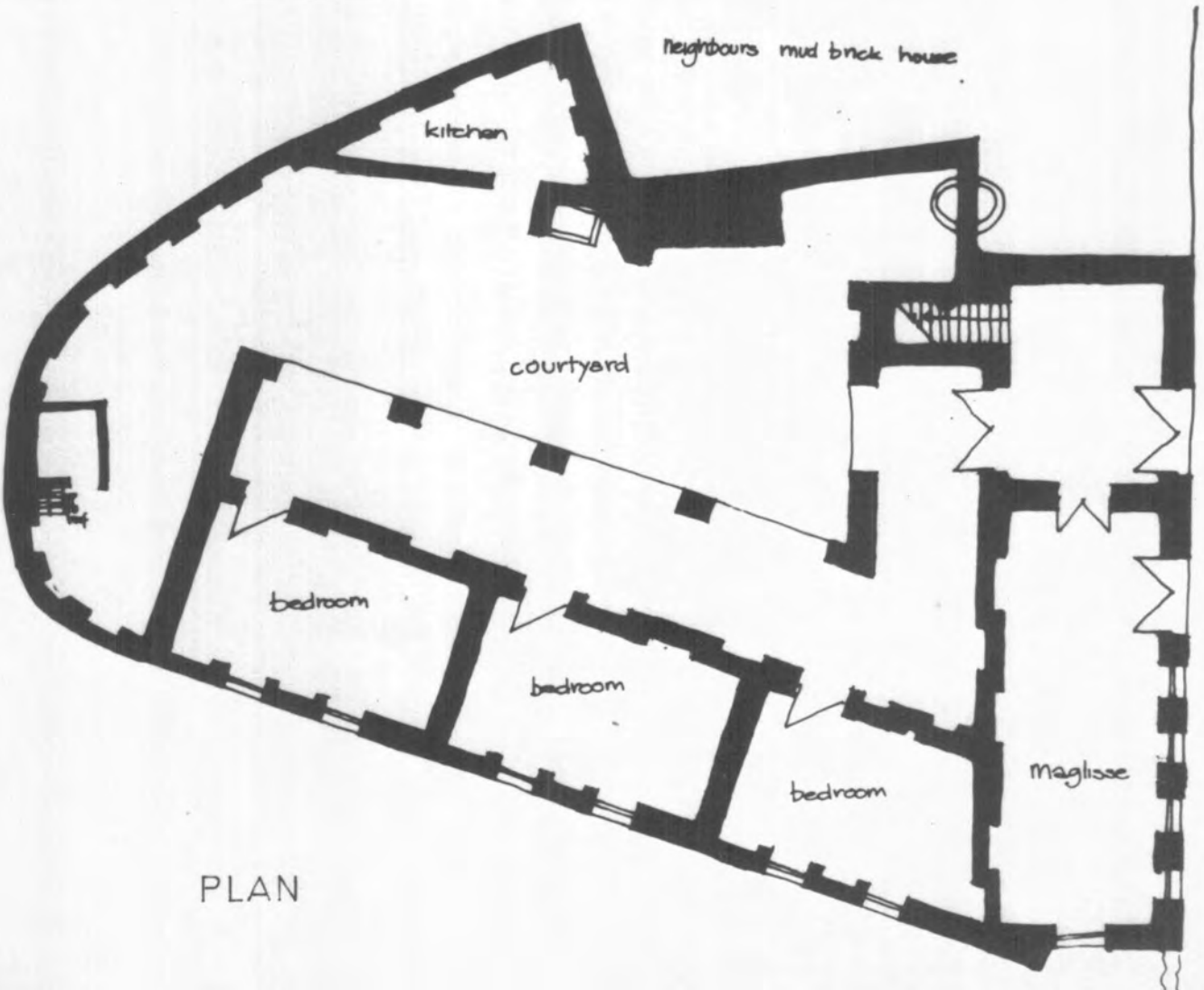


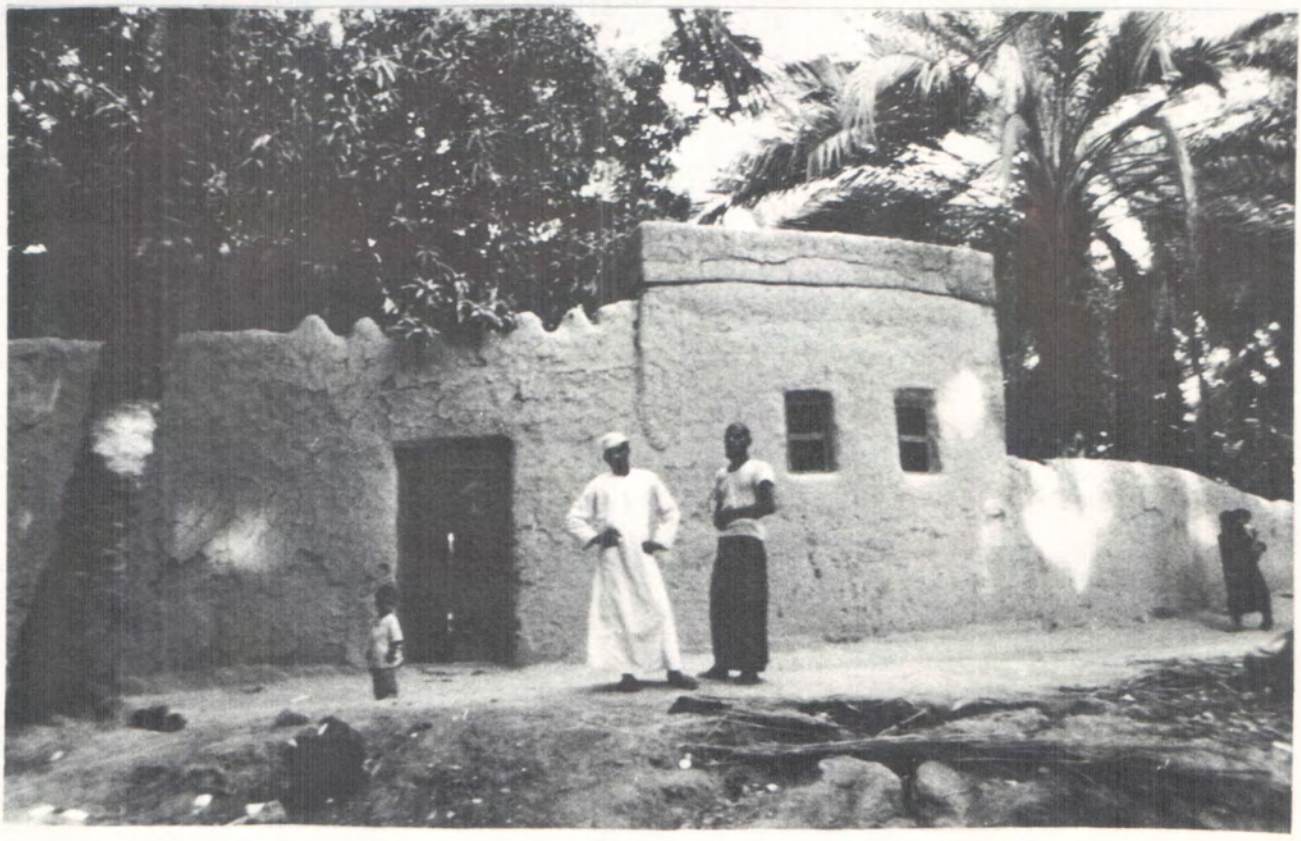
Fig. 408 Recently built concrete block house, in the indigenous form.



PLAN

Fig. 101

School boy 'Salim', age 11, from Nizwa, draws his house with a pitched roof and a front lawn or garden. The child's clothing in the drawing is also inspired by the European model.



Salim's house in Nizwa.

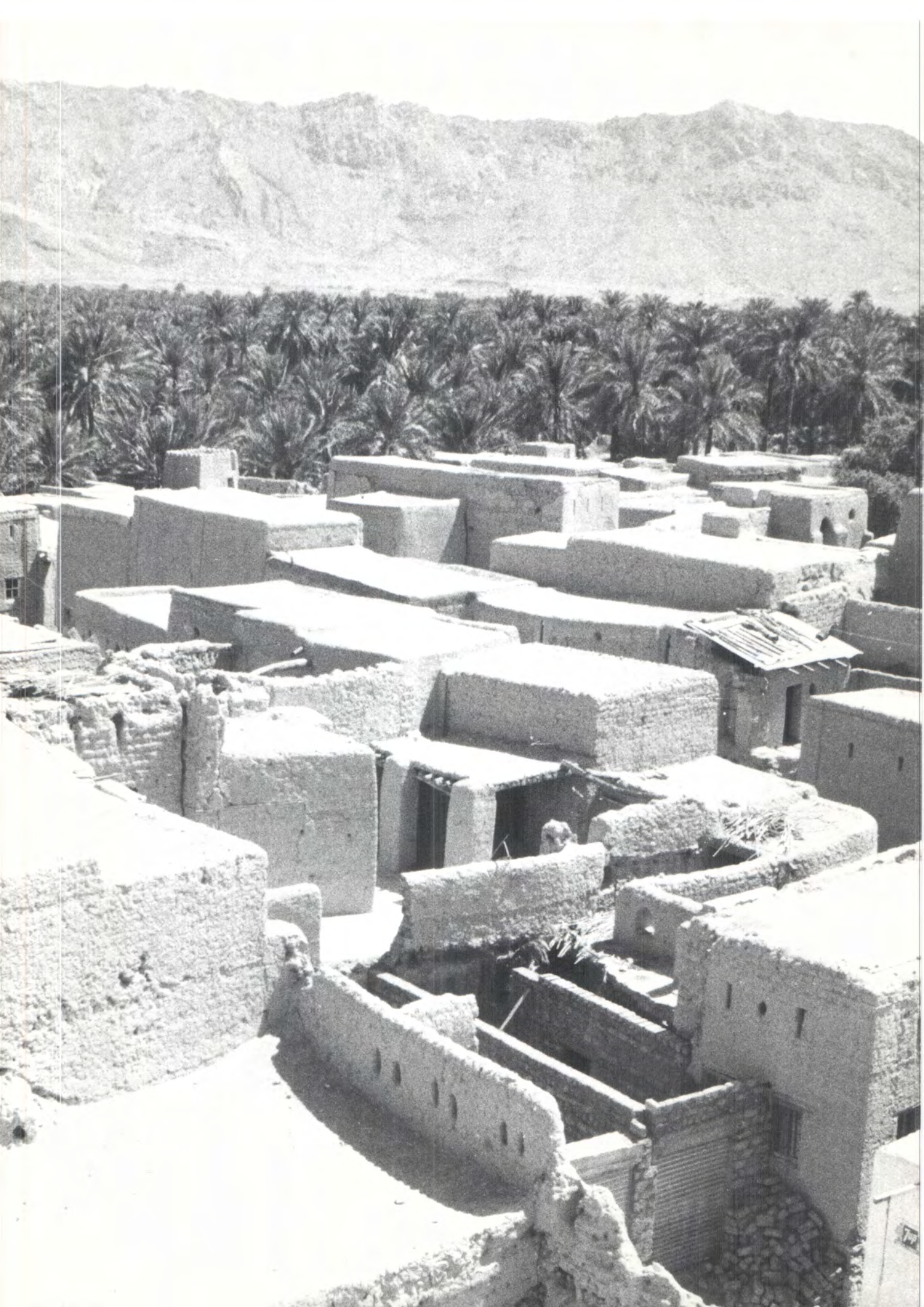
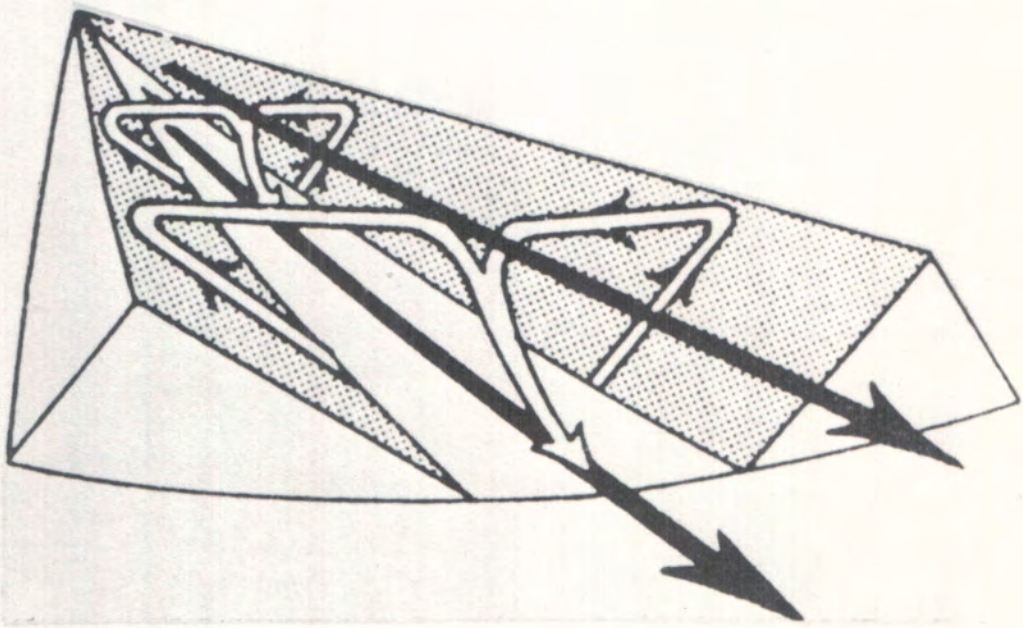


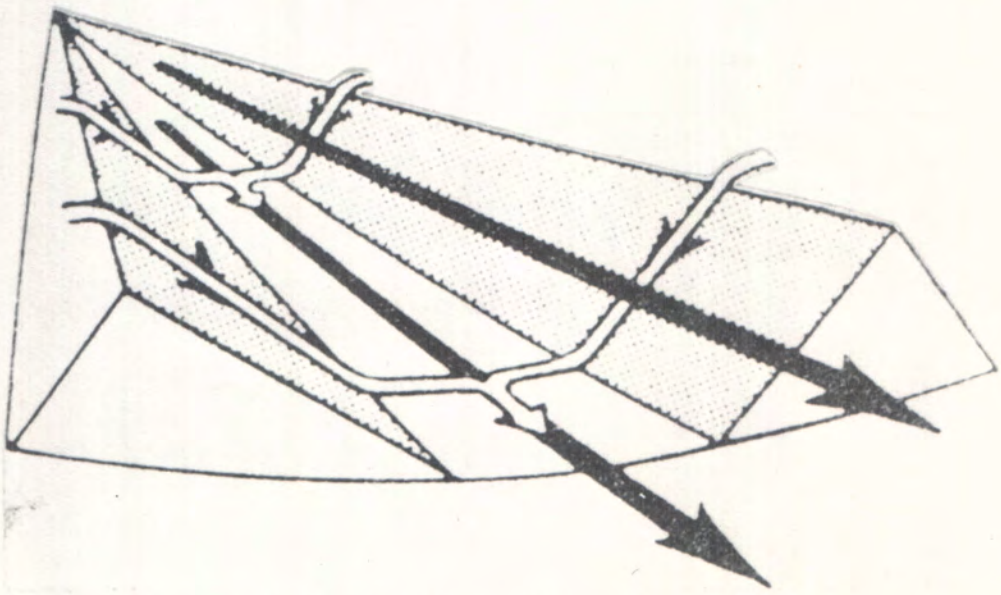
Fig 404

Valley near Izkı.

Daytime



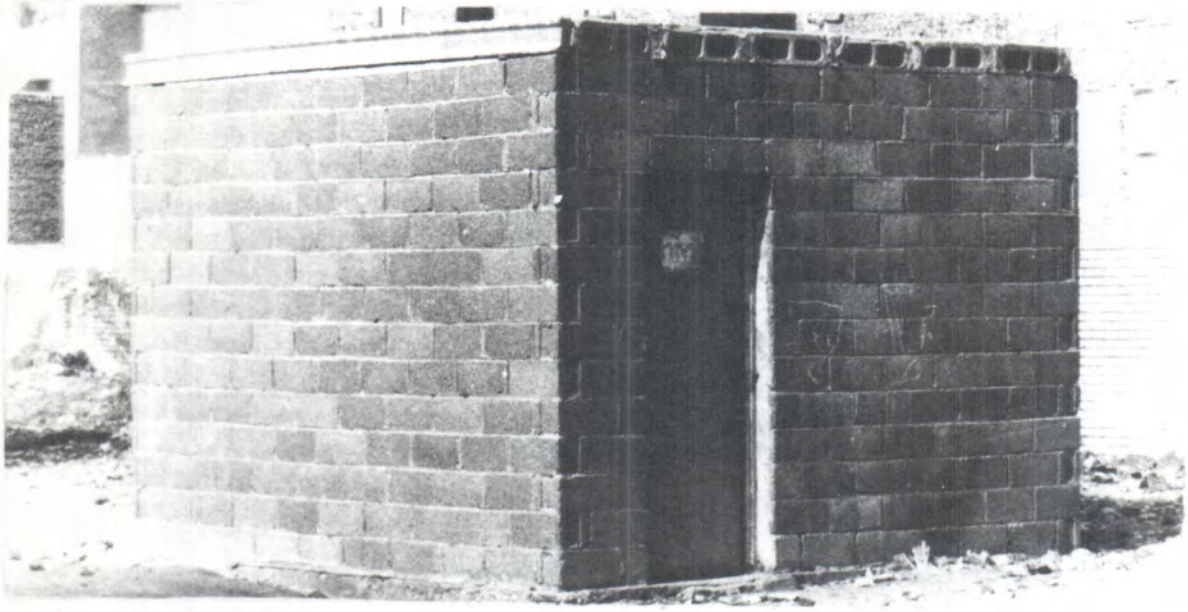
Nightime.



Drawings showing the effect of valley winds modified by daytime upslope & nightime downslope local winds

Fig. 919

Construction of the traditional Flat Roof becomes a problem when timber is expensive or unavailable.



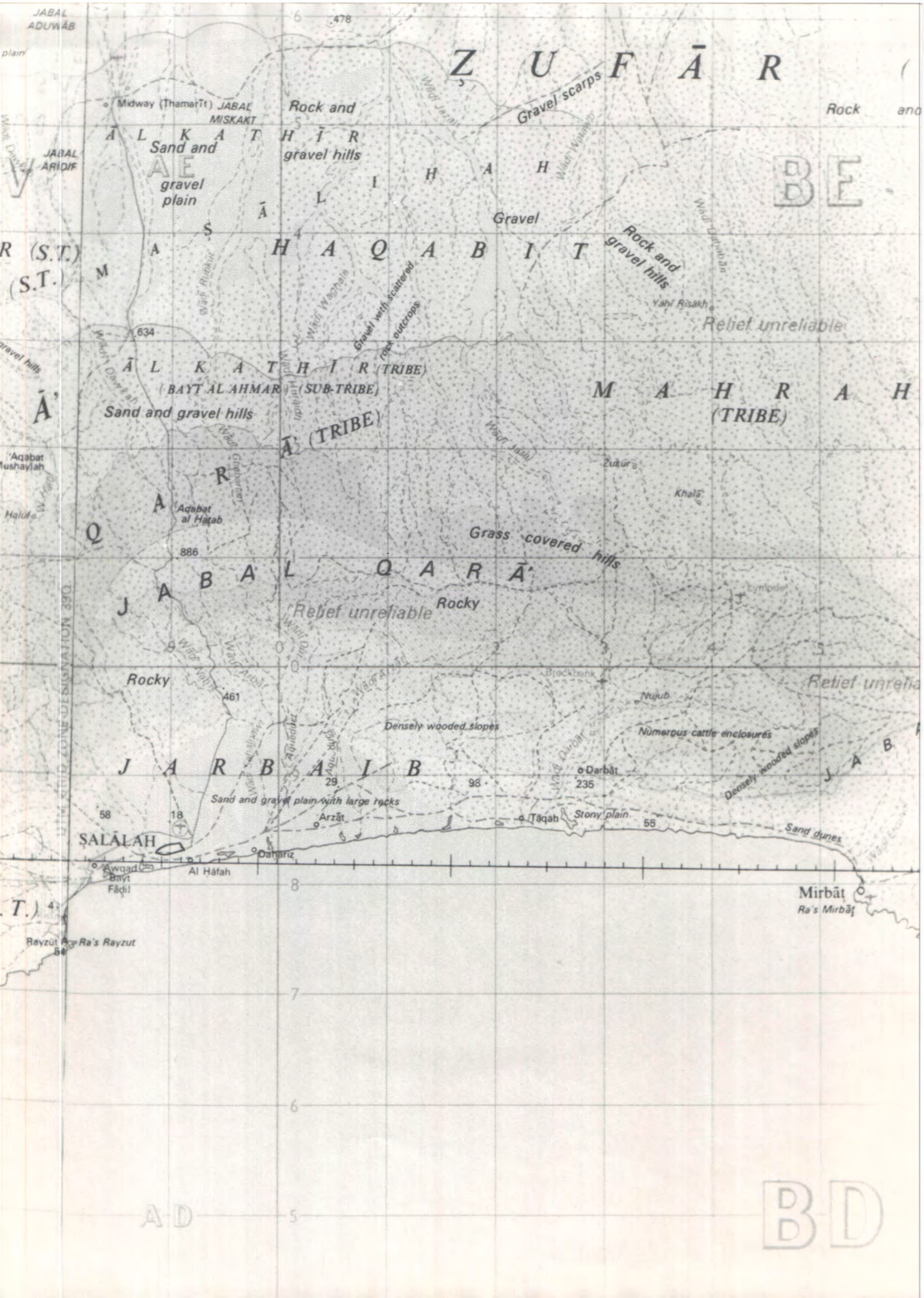
Reinforced concrete roofs are a solution, though very expensive.

Mud Brick Vault + Dome Construction can provide inexpensive roofing.

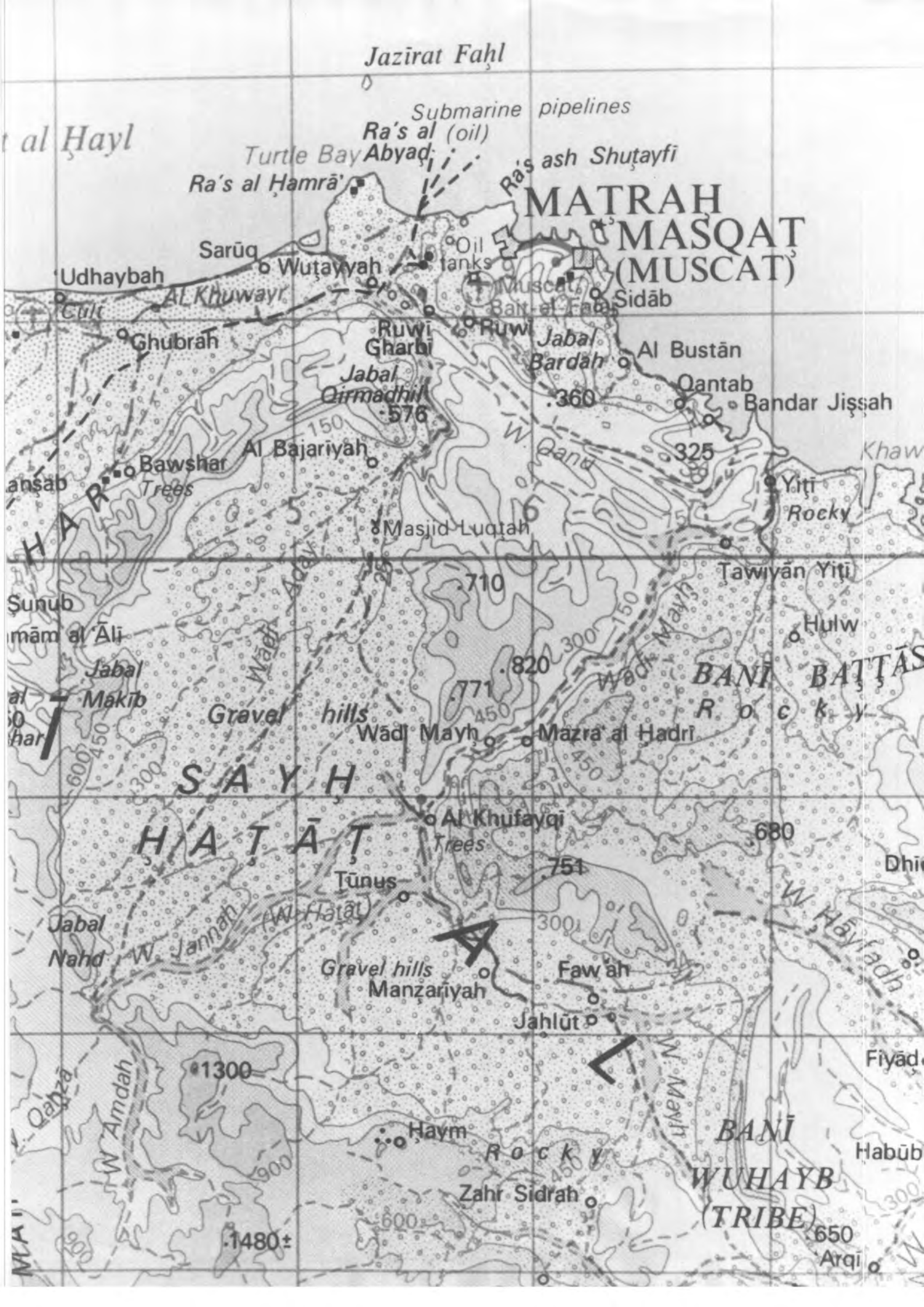
Fig. 925

Falaj - Irrigation system

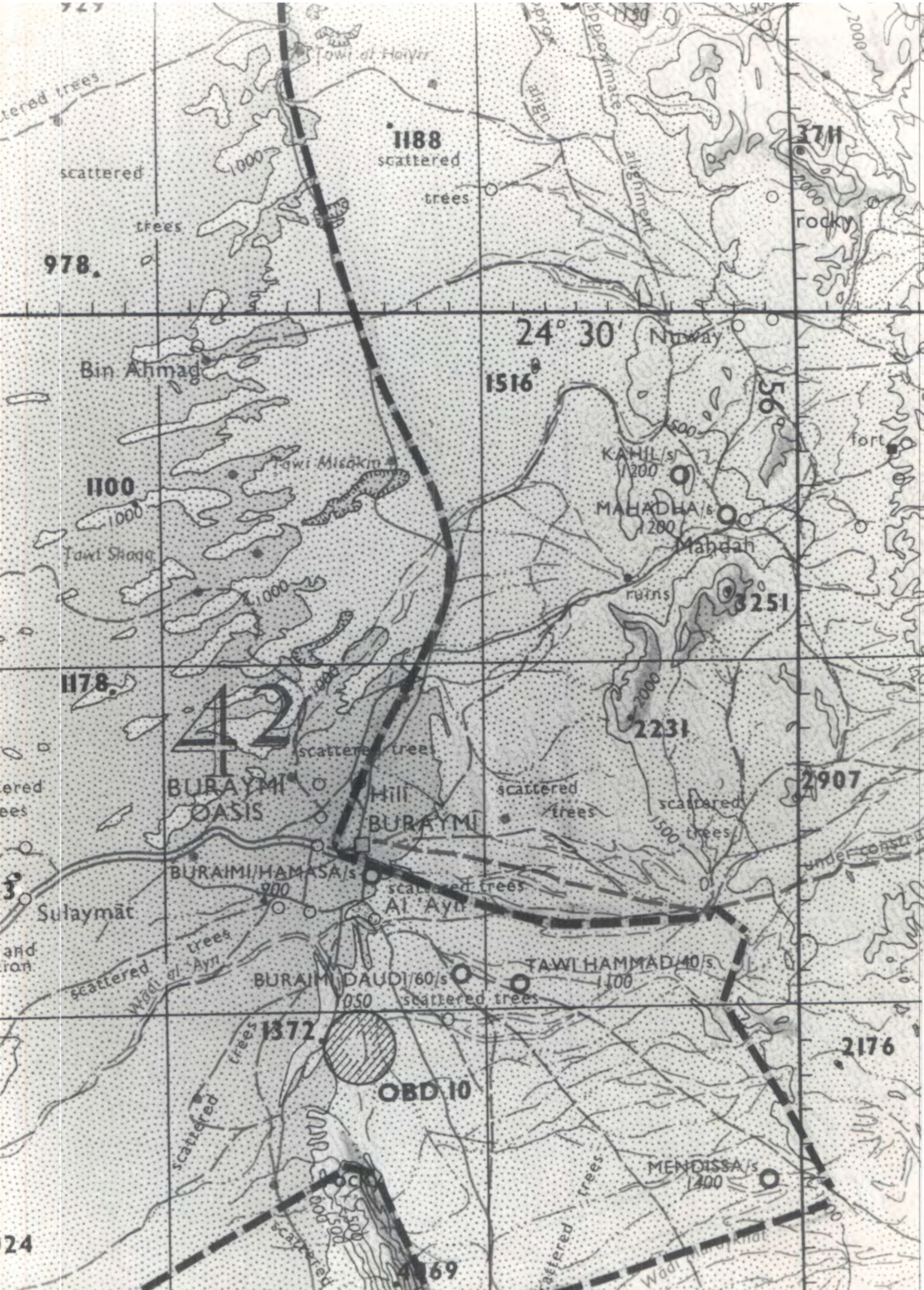
Bathing Areas within house built over the Falaj.



JABAL ADUWĀB
plain
ZUFĀR
Midway (Thamarīt)
JABAL MISKAKT
Rock and gravel hills
ĀL KATHĪR
Sand and gravel plain
JABAL ARIDIF
Gravel scarps
Wadi Jarzīt
Wadi Watahān
Rock and
ĀLIH AH
Gravel
ṢA
R (S.T.)
(S.T.)
M
HAQABIT
Rock and gravel hills
Wadi Rubkūt
Wadi Waghain
Gravel with scattered rock outcrops
Wadi Darbahān
Yahl Risakh
Relief unreliable
634
gravel hills
ĀL KATHĪR (TRIBE)
(BAYT AL AHMAR) (SUB-TRIBE)
Sand and gravel hills
Wadi Dawkah
Wadi Harādh
MAHRAH (TRIBE)
Ā'
Ā' (TRIBE)
Wadi Jaaal
'Aqabat Mushaylah
W. Hafir
Halufo
Zukur
Khala
QARA
Aqabat al Hatab
Grass covered hills
886
JABAL QARĀ'
Relief unreliable
Rocky
Wadi Dūr
UTM GRID ZONE DESIGNATION 39Q
Wadi Nahiz
Wadi Arbat
Rocky
461
Brockbank
Nujub
Relief unrelia
Densely wooded slopes
Numerous cattle enclosures
Densely wooded slopes
JARBAIB
Darbāt
235
29
98
JAB
Sand and gravel plain with large rocks
Stony plain
58
18
Arzāt
Tāqah
55
Sand dunes
SALĀLAH
Dahariz
Awqad
Bayt Fāḍil
Al Hāfah
Mirbāṭ
Ra's Mirbāṭ
(S.T.)
Rayzut
Ra's Rayzut
BE
AE
AD
BD

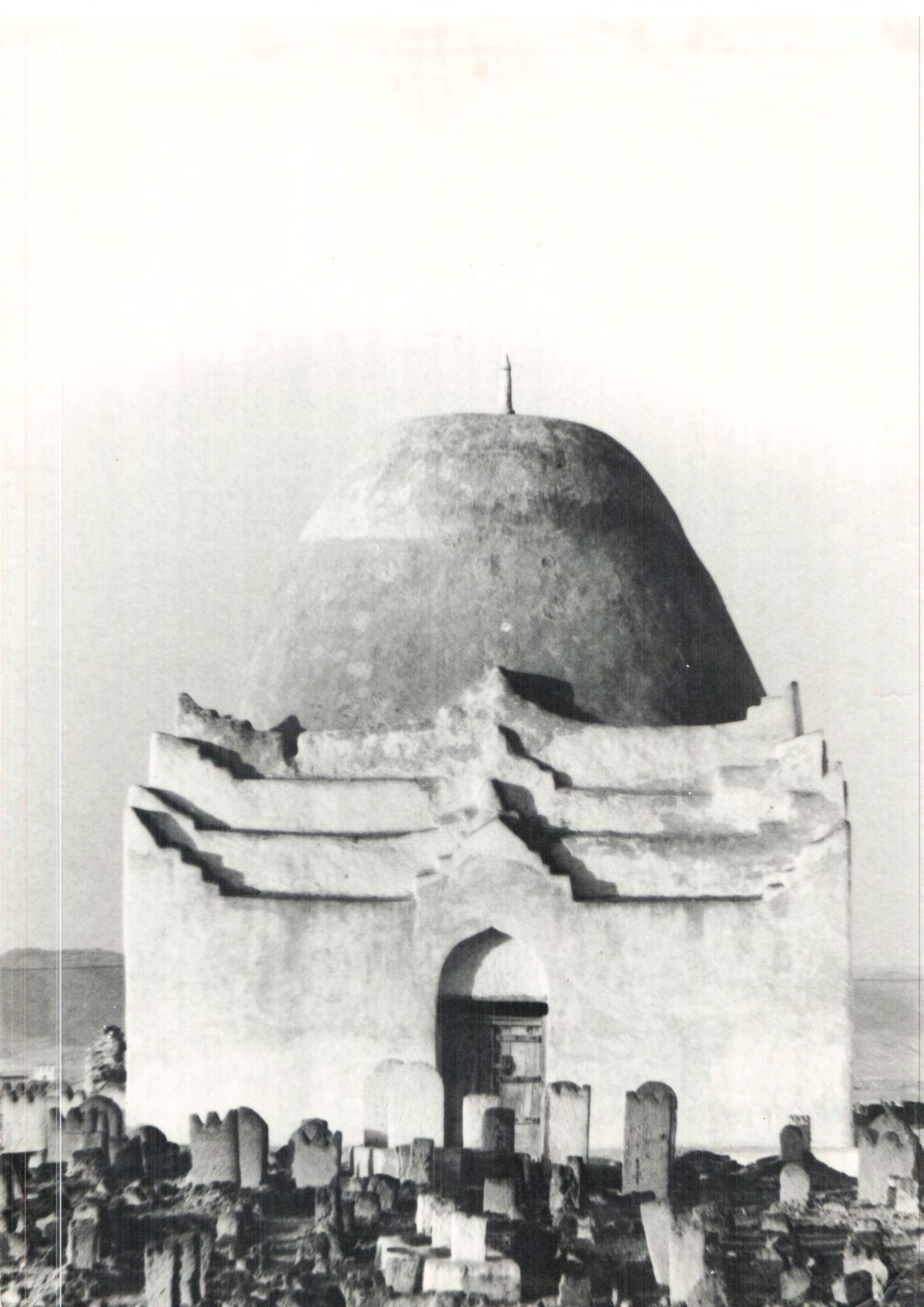

Jazīrat Faḥl
Submarine pipelines
Ra's al (oil)
Abyaḍ
Turtle Bay
Ra's al Ḥamrā'
Ra's ash Shuṭayfī
MAṬRAḤ
MASQAT
(MUSCAT)
Oil tanks
Muscat
Sarūq
Wuṭayyah
Udhaybah
Cult
Al Khuwayr
Sidāb
Bait al Falaj
Ruwī Gharbī
Ruwi
Jabal Bardah
Al Bustān
Ghubrah
Jabal Qirmadhil
576
360
Qantab
Bandar Jiṣṣah
325
Al Bajarīyah
Bawshar
Trees
Yiṭī
Rocky
Masjid Luqiah
Ṭawiyān Yiṭī
710
Ṣunub
Imām al 'Ālī
Hulw
Jabal Makīb
Gravel hills
Wādī Mayḥ
820
771
Mazra'at al Ḥadrī
BANĪ BAṬṬĀS
Rocky
SAYḤ
ḤAṬĀṬ
Al Khufayqī
Trees
680
751
Tūnus
Jabal Nahd
Gravel hills
Manẓarīyah
Faw'ah
Jahlūt
Fiyād
1300
Ḥaym
Rocky
BANĪ WUHAYB
(TRIBE)
Habūb
Zahr Sidrah
650
Arqī
1480±

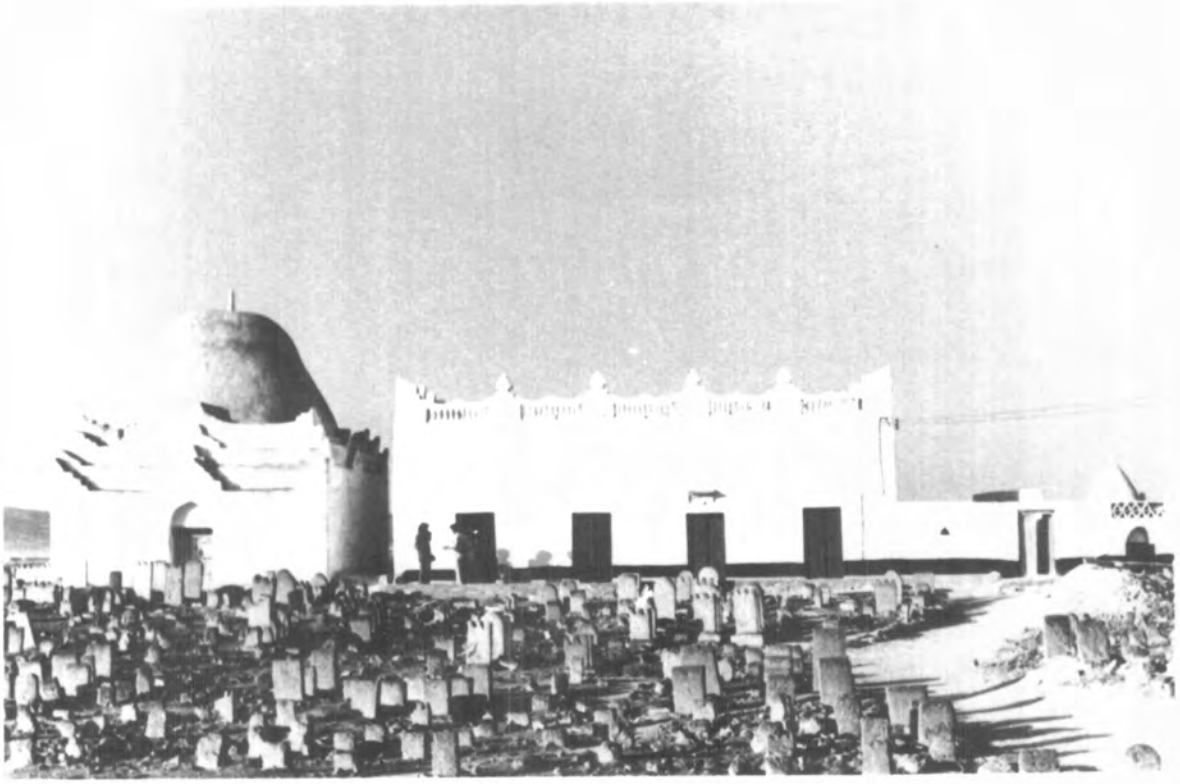
Hayl
Murji
Difā
W. Banī Ghāfir
W. as Saḥtan
Trees
Rustāq
Ṭabāqah
Burj al Mazārī
Al Khadrā
1515
Muriḥah
942
Mahālīt
Subaykhah
Sand and gravel
Ṭawīyah
Fashah
Trees
2510
2173
Far
Awābī
Trees
Ṭawī Sīh
W. Banī Kharūs
Jabal 1829
Haymir
Ghubrah
Qarn al Hammām
2340±
Tawī Sharqīyah
ʻAmq
Al Qasmitayn
Al Jufar
Tikhah
Al Ambah
ʻAyn ʻAmq
2570
Al ʻAjal
Al Hajir
Madrūj
2980
Al Hūb
Mashūq
An Nid
Al ʻUqmayrah
Zammah
W. Banī ʻAwf
Al Biʻr
Al ʻAyr
BANĪ KHARŪS (T.)
Jabal al Qibal
2140±
Qarn Saqlah
GHUBRAH
BOWL
2470±
Firāʻah
Salmah
Tower
Birkat Daʻn al Gharī
Hāt
Khawr Zammah
Halhal
Al Hijir 1990
Istal
W. Banī Kharūs
Sunnār
Fiq
Hayhar
Hil Hijār
Misfāh al Shurayqiyīn
Musaynaʻah
Hijār
Dār al Qalʻah
Rūʼūs
2394
Tower
Ghūl
W. Ghūl
Misfāh
W. al Maʻgal
Yawiyah
Qayūt
Al Khuṭaym
Hulaylat
Ṣaqrah
Wakān
Hadash
2300
Sumāʼil Gap
Al Ḥamrāʼ
Towers
Cult.
Al Qaryah
Mabbāt
Asaqāt
Bilarb
Jaylil
Shanuf
2490±
Hammā
Misfāh al Halfayn
Ghumar
Al Qalʻah
930
Zikt
Hayl
Kahf al Humayr
Pool
Sayq
Pool
Duwaykhilah
2270
Hayl Yaman
Tower
Bilād Sayt
Towers
Ghubrat Tanūf
1110
Al Maʻqul
Shirījah
Banī Habīb
Shurayjah
Tanūf
Rawdah
Salūt
Masirat Ruwājih
2130
Raʼs ash Shayf
Qarn al Khuzar
721
Mutī
W. Bahlā
W. al Abyad
Al Abyad
Kamah
W. Kamah
1200
W. Muʻaydin
JABAL AKHDAR
JABAL AL MĀHĪL
W. Halfayn
JABAL
654
Bahlā
Wall
Rakhbah
1750±
Muʻaydin
Bid
1407
Qārūt al ʻUlyā
Qārūt as Suflā
874
593
Hayl al Liwā
al Jizwah
Cultivation
Qurtah
HALLĀ
Rocky
Shurayjāt
Ghabrah
Katbiyah
Fulūj Sayghah
1142
Misfāh
1418
Tawī Sadh
Towers
Towers
Harat Rahā
Maghyūth
Wādī al Murr
Cultivation
J. Bushkhūt
Jimah
Al Jināh
Wāsil
Birkat al Mawz
776
Izkī (Zikī)
Nazwā
Nizwā
Jabrīn
Jalah
Naṭṭalah
Rocky
892
J. 875
Firq
Jabal Safrā
Rasīs
Valve
813
Jabal Fahūl
Firq
Zukayt
524
976
Jabal 1078
Khamilah
517
Taymisah
Trees
528
J. Khayl
793
J. ʻAwq
Jūl Ar Raddah
Sayq al Khuds
Jabal al Fay
909
984
784
Karshah
Cultivation
W. Taymisah
W. Yanqul
Aqueducts
Maʻāmir
Sūq Qadīm
Qalʻat al ʻAwāmir
634
Habl Hadīd
Cult.
(TRIBE)
SAYH AS SALĀLĪ
Cultivation
Manah
Aqueduct
451
Mahyūl
578
Hamādiyīn
Al Hilyah
Falaj al Awāmir
Aqueducts
Mudaybī
Maʻtamar
Shafāʼ
Cultivation
591
Jabal
527
Aqueduct
Wādī Halfayn
JABAL HAMMAH
Wādī Bū Khissah
(W. Kalbū)
Underground pipeline
Low gravel hills
Bisyah
Cult.
Low rocky ridges
(Hammat Bū Khissah)
682
Jabal Nukhayl
Izz
388
440±
430±
JABA
Aqueducts
Mudrī
Towers
Wadim
Wādī Bahlā
Khawar
Jabal Rasakh
Wādī Izz
Fulayj
Hammat al Khurshamān
586
Al Hubi
556
370
Many low rocky ridges
Wādī Halfayn
SAFR
.393
Maʻmūrah
Tawī Hadīthah
Tawī Yāsir
.388
Rocky
Qurūn al Ghubar
487
Pumping station
Jurah
461
Jabal Khatmah
Wādī Yanqul
409
372



scattered trees
Tawi al Hayir
1188
scattered
trees
scattered
trees
978
approximate alignment
3711
rocky
24° 30′
Nuway
Bin Ahmad
1516
56
fort
KAHIL/s
1200
MAHADHA/s
1200
Mahdah
1100
Tawi Miskin
Tawi Shaqq
ruins
3251
1178
42
2231
scattered trees
BURAYMI
OASIS
Hill
BURAYMI
scattered
trees
scattered
trees
2907
BURAIMI/HAMASA/s
900
scattered trees
Al 'Ayn
Sulaymat
Wadi al 'Ayn
scattered trees
TAWI HAMMAD/40/s
1100
BURAIMI DAUDI/60/s
1050
scattered trees
1372
OBD 10
2176
scattered
MENDISSA/s
1400
scattered
trees
scattered
trees
4169


Qalhāt
Jawzah
Wādī Ḥalfayn
Wādī Ḥalfayn
Bi'r Birā'
Khawr Ghāmah
Shurayjah
799
Gravel
SŪR
Sunaysilah
Ra's Sharḥ
Ayqā Towers
Rocky
Bilād as Ṣūr
Blud
Ābāt
Fītā'
Trees
Maslāq
Taymā'
Rafṣah
Wādī Rafṣah
Wādī Ḥalfayn
.250±
.891
.244
Rocky
Gravel plain and gra
.450±
Sand
290±
.951
Silsil Wādī Yu'ayy
.510±
210±
.850±
.620±
1050±
Gravel hills
BALKHAMIS
6
7
A
B





The high quality of the indiginous architecture of the Salala region can be seen in its Mosques.

One of the oldest town houses in Salala (18'th century), though in disrepair.

Fig. 937

In densly settled areas waste water disposal and drainage should be dealt with on a community level.

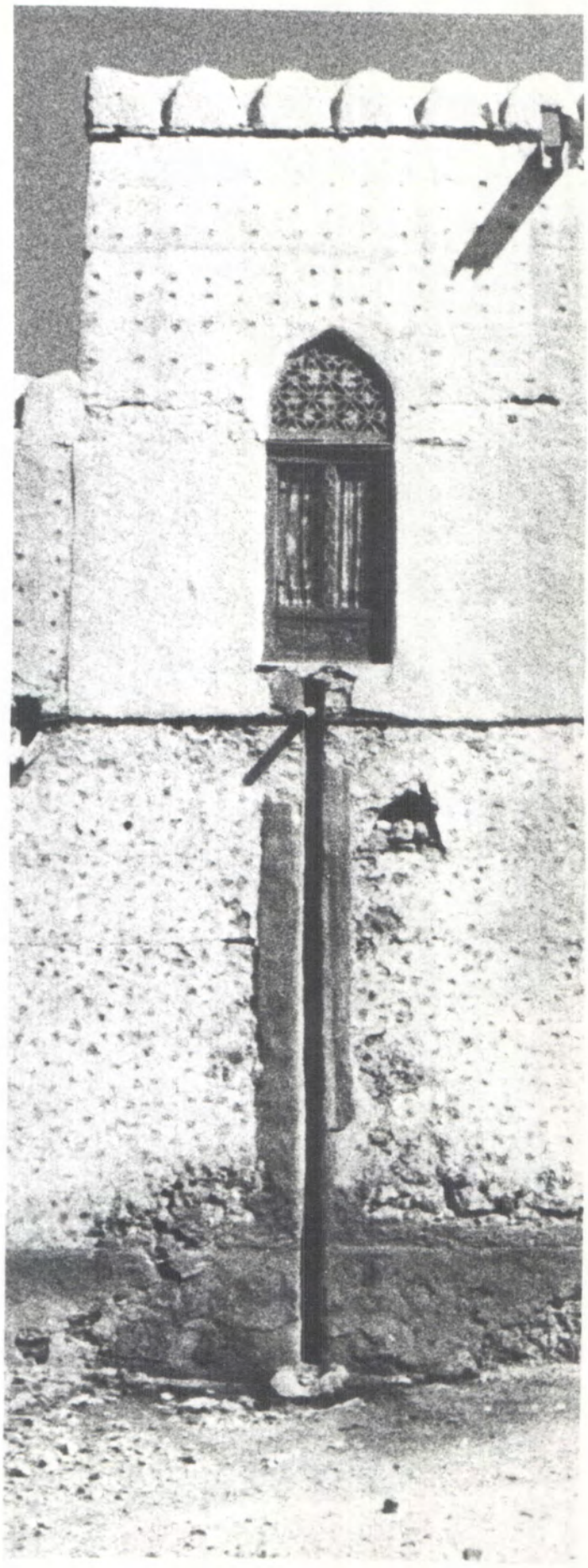
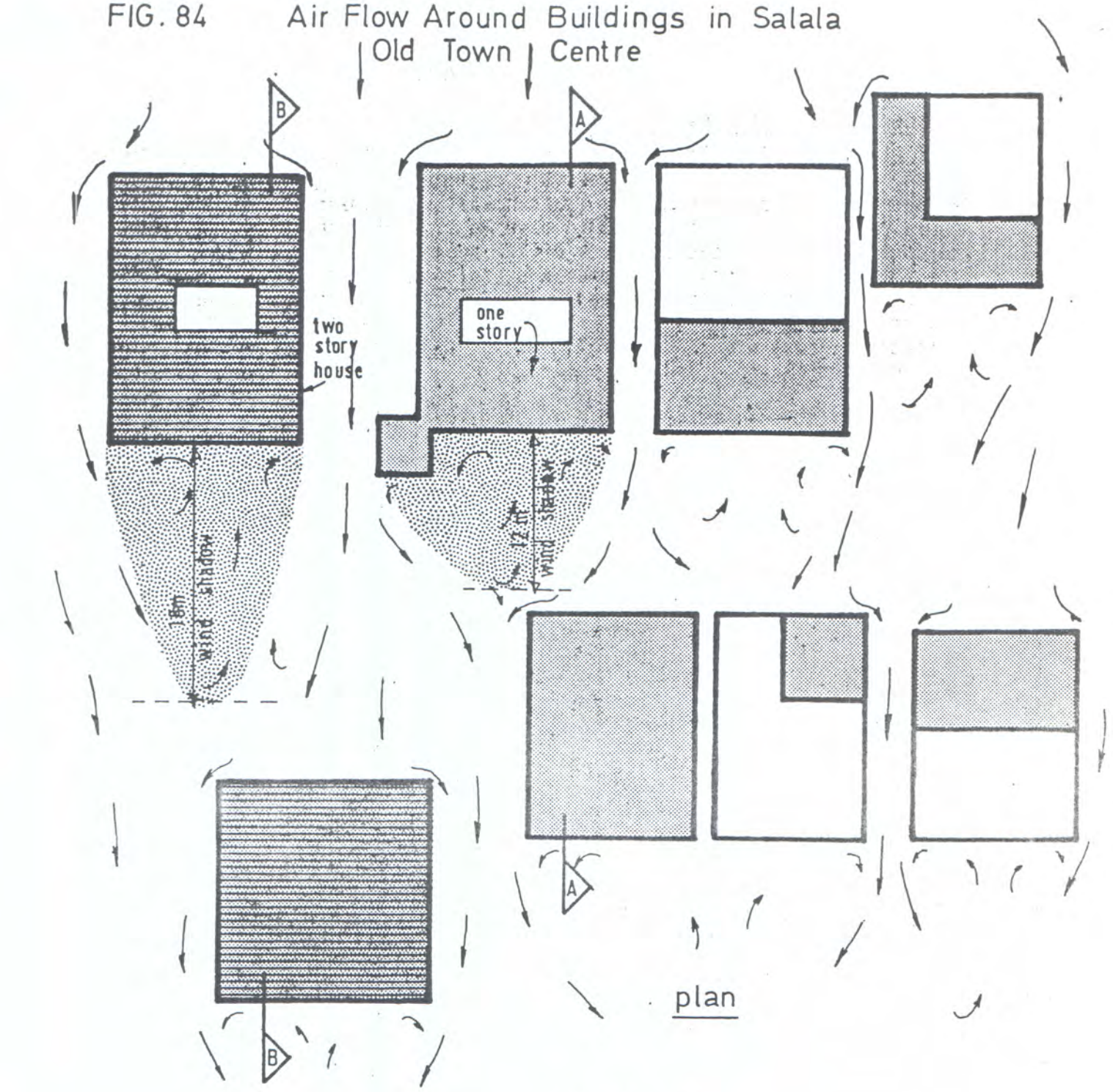
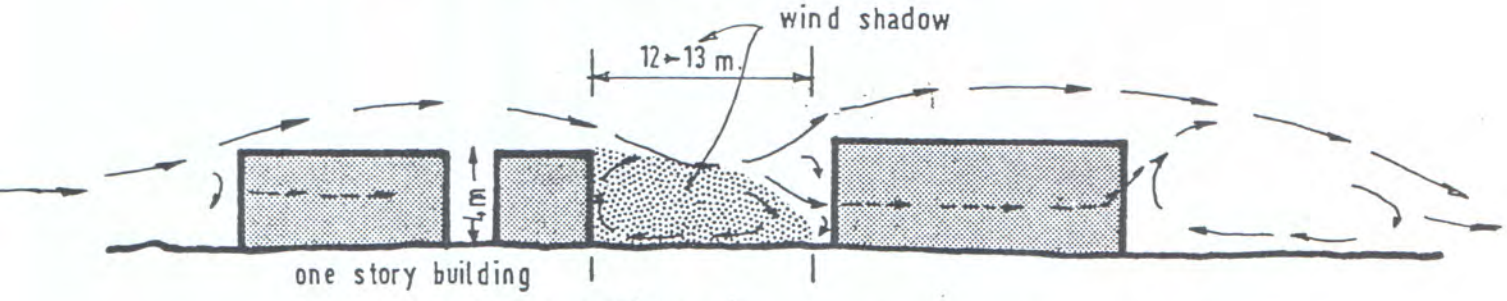


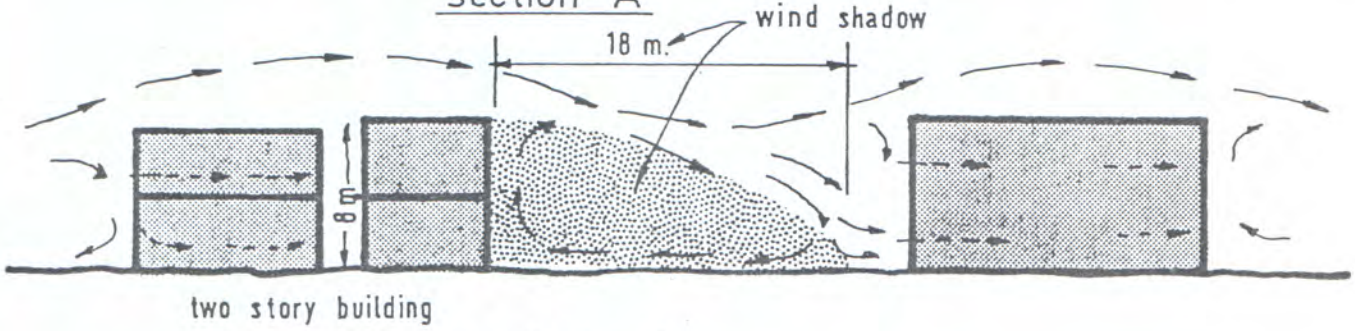
FIG. 84 Air Flow Around Buildings in Salala Old Town Centre



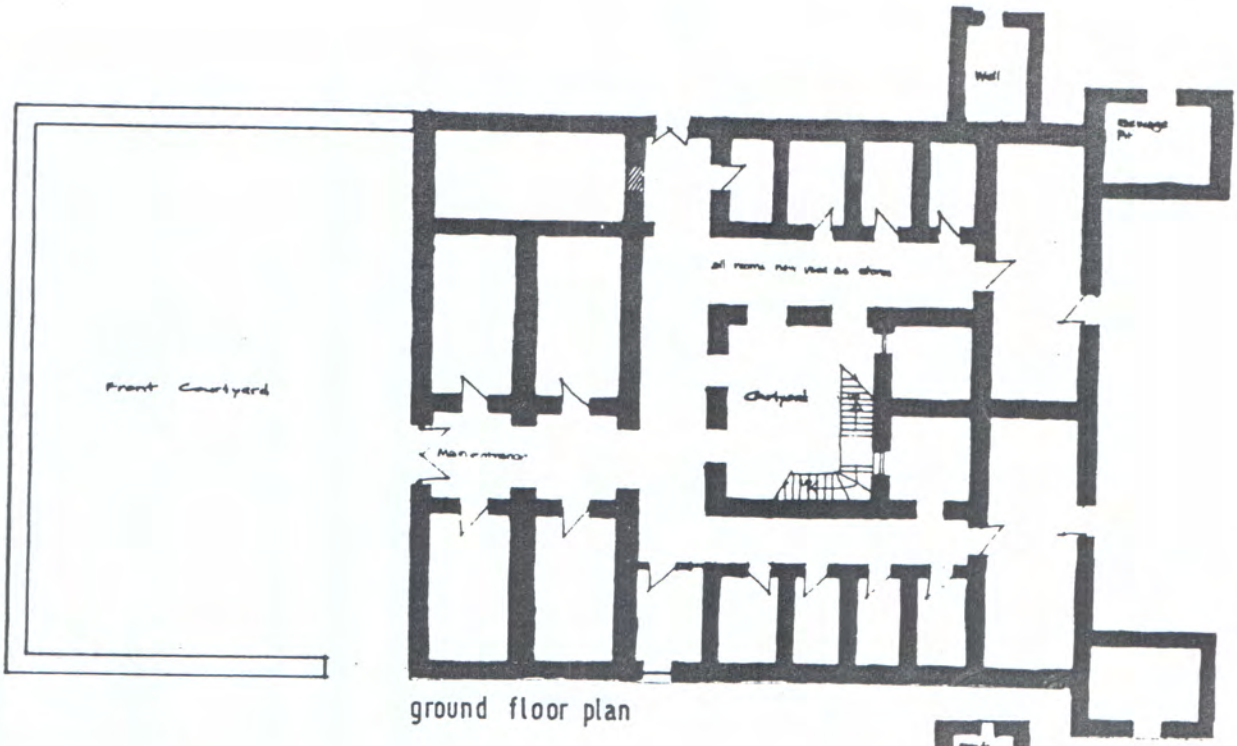
plan



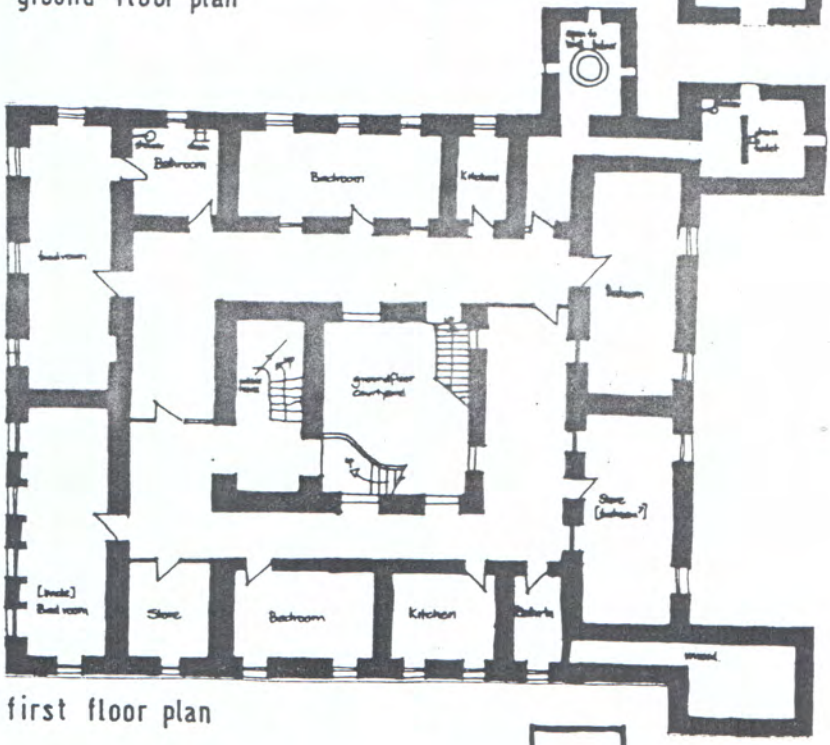
section A



section B

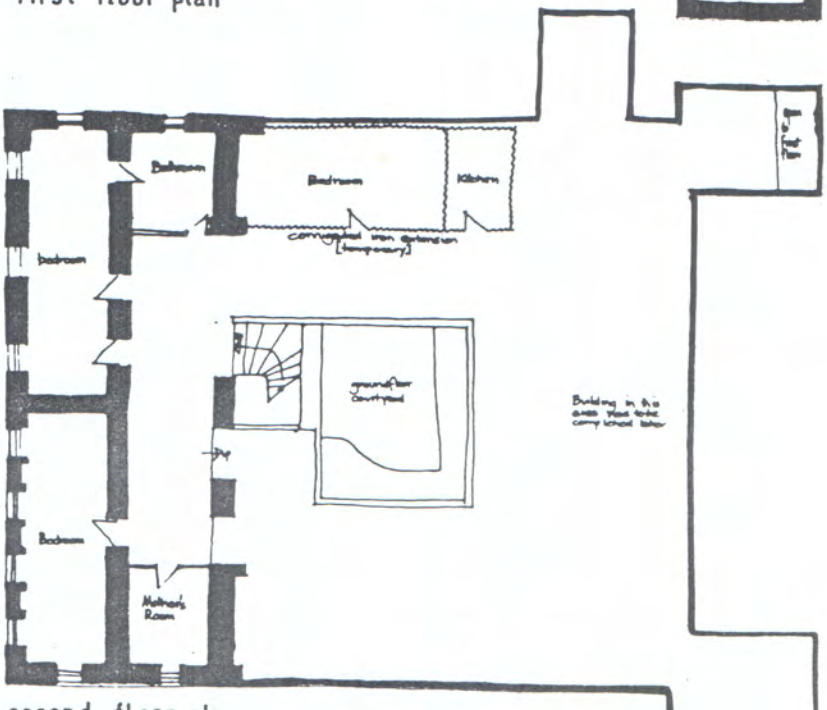


ground floor plan



first floor plan

Fig. 813
Courtyard house in Salala old town centre. 60–80 years old. Limestone construction. Extensions still underway. Inhabited by extended-family of several brothers.



second floor plan

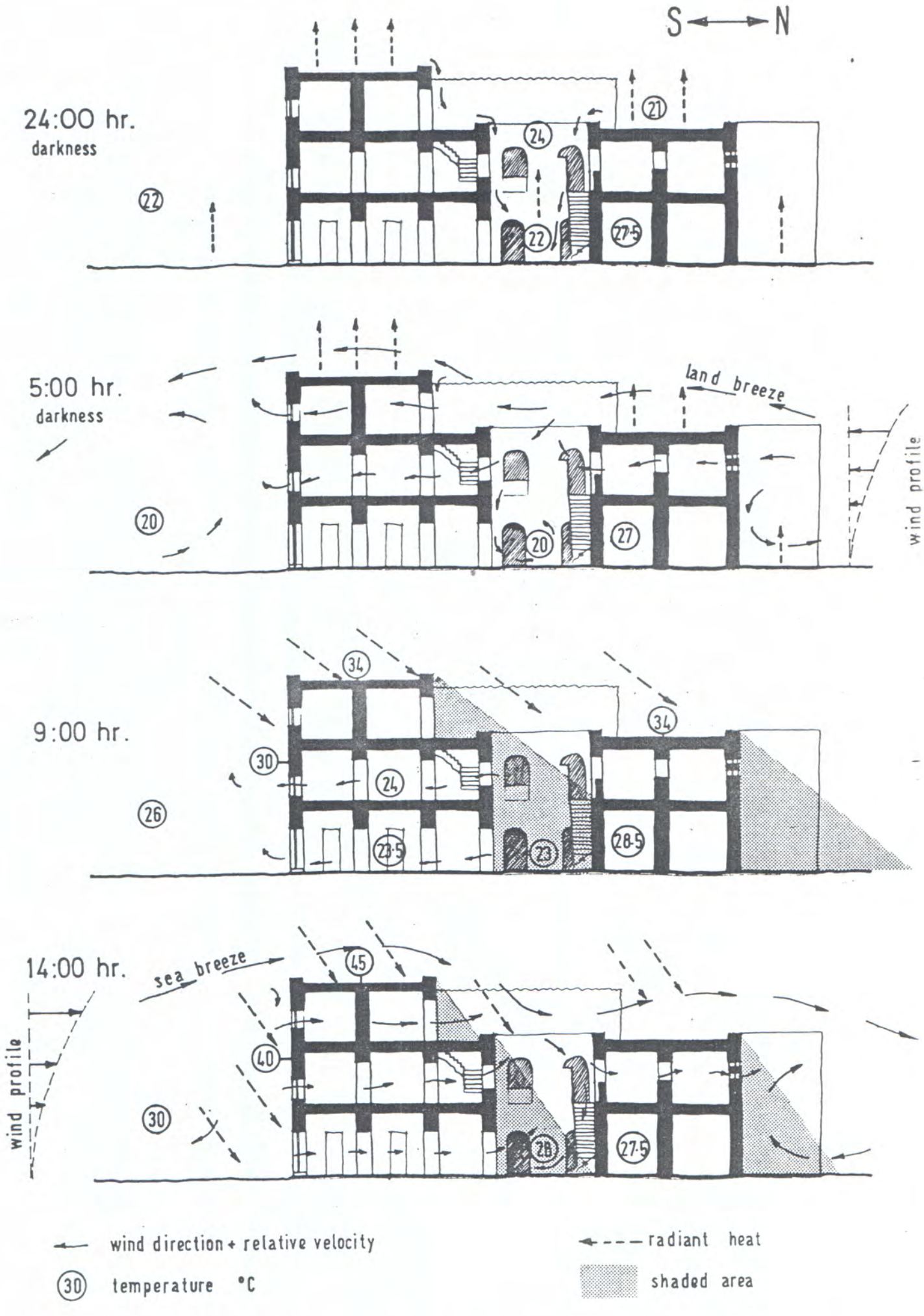


Fig. 814
Climatic Response of Salala Courtyard House · Oct. 28, '73

Fig. 87c
One story house in new settlement area. Extended family ownership by three brothers. Construction basicly limestone, with barasti and composite roofing. Extensions underway.

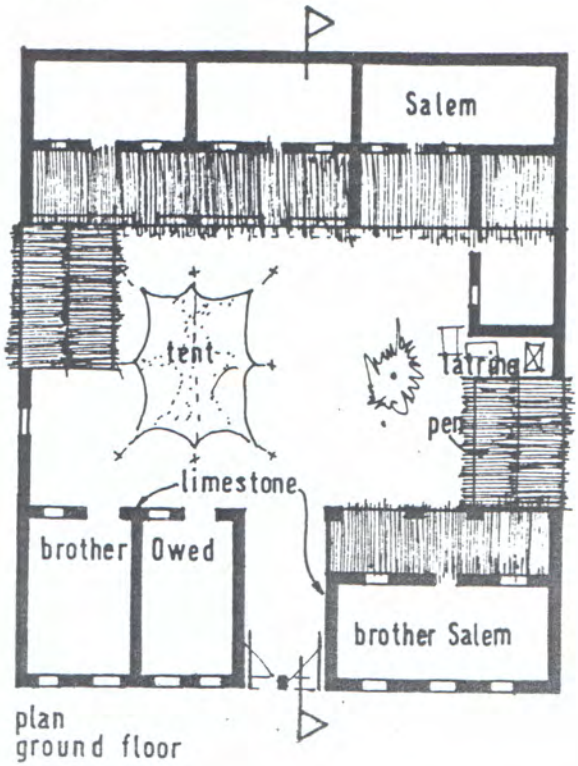


Fig. 87 d
Two story house in old town centre of Taqah. Limestone construction with vaulted barasti roofing.

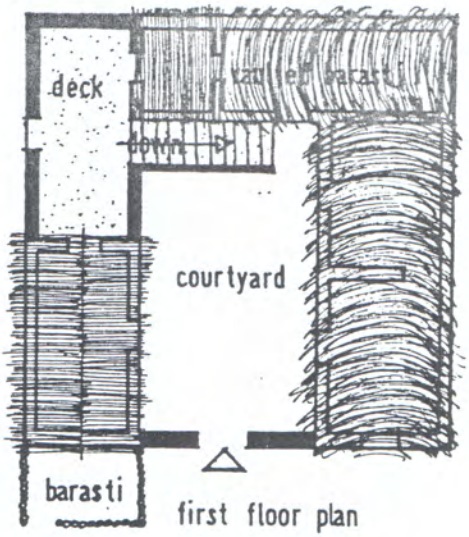


Fig. 87e
Three story limestone house in old town centre of Salala. 60 to 80 years old. Extensions underway.

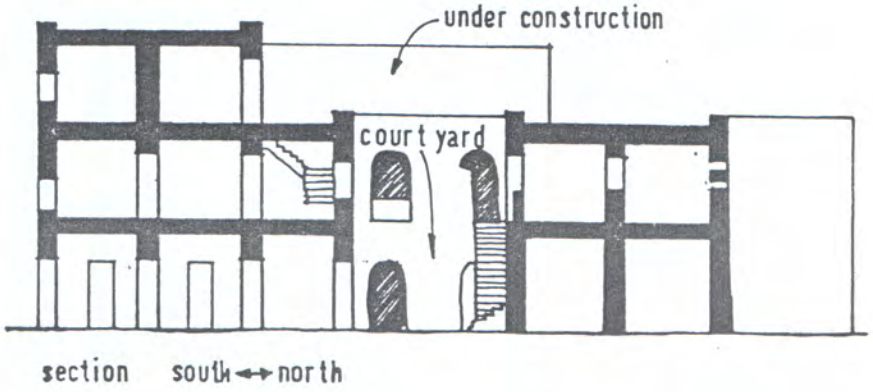


Fig. 85 SALALA TOWN CENTRE