

# NEW GOURNA

## AHMED ABDEL RASSOUL

### NEIGHBOURHOOD

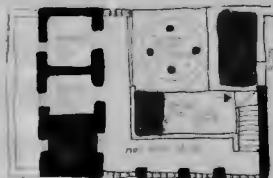


This area was intended for a special family group, the head of whom decided he preferred another part of the village. The present occupants just moved in. We surveyed four of the houses. The owner of the fifth was away. None of them have running water or toilets as intended. All washing is done in teshts, and water jars supply water.

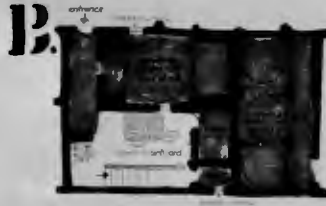


ground floor

Om Hasan is a widow. She has one son who has lived in Aswan for seven years. She came here from Old Gourna.

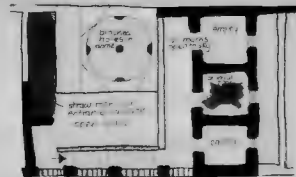


first floor



ground floor

Hassan moved from Old Gourna when he married. He has a baby daughter, and is a farmhand.

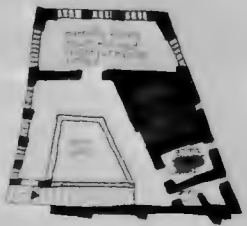


first floor



ground floor

Sabra moved from Old Gourna when her husband died. Her husband's 2nd wife's son's wife lives here [as he's in the army] and her 4 children.



first floor



ground floor

Koh is married with 3 children. He gathers bird droppings to sell as fertilizer.



first floor

# NEW GOURNA

AHMED ABDEL RASSOUL

NEIGHBOURHOOD



Om Hassan- grain stores



Street- mastaba, light and shade



Sabra-cracked arches on first floor



Sabra- daughter-in-law and hens



Sabra - making "shai" in court yard



# NEW GOURNA

## BAERAT COMPARISON



New Gourna

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Baerat

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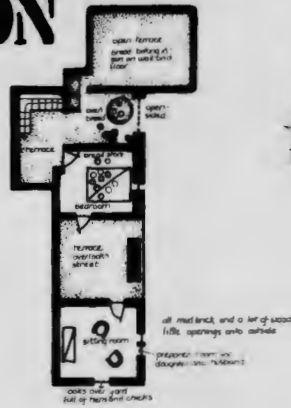
# NEW GOURNA

1 Ahmed Hussein

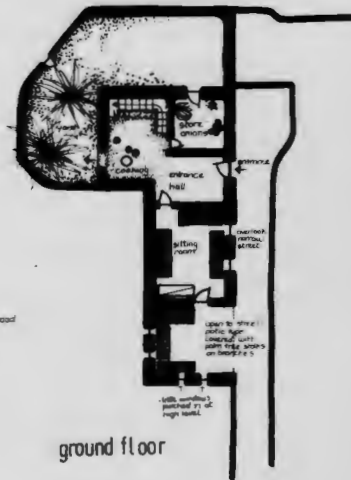
## BAERAT COMPARISON

We studied Tod, an area in the village of Baerat near New Gournna, to see how an indigenous village differed from one which was architect designed.

We surveyed three houses to see how they compared with those of the Ahmed Abdel Rassoul neighbourhood in New Gournna.

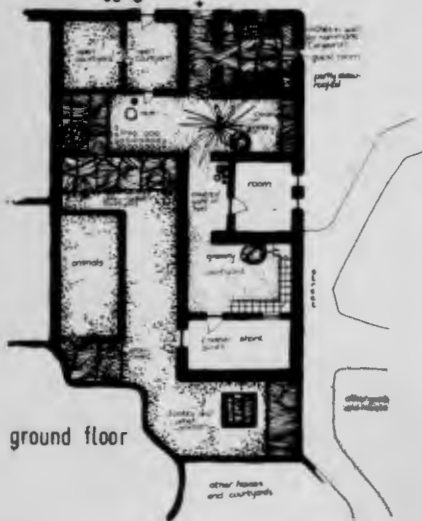


first floor



ground floor

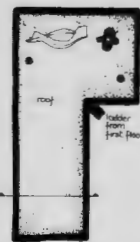
2. Haggag



ground floor



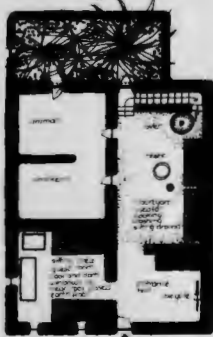
first floor



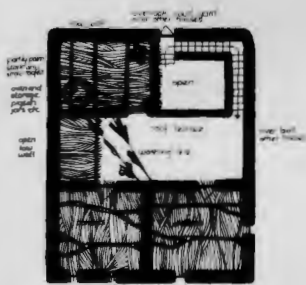
roof



3. the Magistrate



ground floor



first floor

# NEW GOURNA

1945 & 1973



THE HOUSES IN NEW GOURNA WERE DESIGNED WITH SPECIFIC FAMILIES IN MIND. AFTER LYING EMPTY FOR SOME TIME DUE TO OPPOSITION FROM THE VILLAGERS OF OLD GOURNA AGAINST THE MOVE, THEY WERE OCCUPIED BY VARIOUS FAMILIES FROM OLD GOURNA WHOSE NEEDS DID NOT CORRESPOND TO THE NEEDS OF THE ORIGINALLY INTENDED OCCUPANTS. THESE PEOPLE HAVE SINCE ADAPTED THEIR ENVIRONMENT OVER THE YEARS TO SUIT THEIR OWN WAY OF LIFE - EXTENDING HOMES INTO THE STREETS, BUILDING ON COURTYARDS FOR ANIMALS, BLOCKING UP WINDOWS AND DOORS, ETC.

MANY BUILDINGS, MAINLY PUBLIC BUILDINGS ARE UNUSED AND RUINED. THE PUMP HOUSE BELOW IS UNUSED BECAUSE THE PUMP IS BROKEN AND NO-ONE CAN FIX IT. ONE DAY PERHAPS SOMEONE WILL BLOCK UP THE OPENINGS AND MAKE A STABLE OUT OF IT.



# OLD GOURNA VIEWS





Group at work





# HOUSE

SUN DRIED MUD BRICK HAS BEEN THE STANDARD BUILDING MATERIAL OF UPPER EGYPT FOR OVER 4000 YEARS. THE GRANARIES AT THE RAMASSEUM NEAR LUXOR DATE FROM THIS PERIOD. OTHER EXAMPLES OF A SIMILAR AGE EXIST. MUD BRICK HAS BEEN IN USE ALL OVER THE MIDDLE EAST AND NORTH AFRICA.

1 THE GRANARIES AT THE RAMASSEUM

IN THE FIELD WORK TRIP CARRIED OUT BY THE AA THIRD WORLD UNIT IN APRIL AND MAY 1975, THE GROUP BUILT AN EXPERIMENTAL DWELLING UNIT USING SUN DRIED MUD BRICK, AND TRADITIONAL VAULT AND DOME METHODS OF CONSTRUCTION.

THE HOUSE WAS BUILT IN NEW GOURNA, UPPER EGYPT.

PRACTICE VAULTS WERE BUILT BY THE STUDENTS, AND A PRACTICE DOME ON SQUINCH ARCHES. THEY THEN BUILT THE SMALL HOUSE, WORKING WITH THE ASSISTANCE OF TWO NUBIAN MASONS, HAGGAG AND ALAM EL DIEN.

2 PRACTICE DOME ON SQUINCH ARCHES

3 SETTING OUT THE SITE OF THE HOUSE WITH PRACTICE VAULTS IN THE BACKGROUND

4 EXCAVATIONS FOR THE FOUNDATIONS, FILLED UP TO THE TOP OF THE CONCRETE BASE, WITH THE RED BRICK USED FOR THE FOOTINGS, STACKED IN THE CENTRE. CONCRETE WAS USED BECAUSE OF THE INSTABILITY OF THE SOIL IN THE AREA.



# HOUSE WINDOWS



5

5 ARCHES AND WINDOWS ARE BUILT BY FILLING IN THE PROPOSED OPENING WITH BRICK, USING NO MORTAR. THIS FORMWORK IS SHOWN HERE IN ITS BEGINNING STAGES, ON THE EAST WALL.



6

6 THE ARCH OF THE WINDOW IS CONSTRUCTED OVER THE FORMWORK AND THE WALLS EITHER SIDE OF THE OPENING ARE BUILT UP AT THE SAME TIME.



7

7 THE MID BRICKS ARE REMOVED FROM THE OPENING, LEAVING THE COMPLETED WINDOW.



8

8 EAST ELEVATION SHOWING THE COMPLETED WINDOW.

# HOUSE VAULTS



9 VAULT BRICKS ARE THINNER THAN STANDARD BRICKS, AND MADE WITH MORE STRAW THAN USUAL, FOR LIGHTNESS (120 LBS OF STRAW FOR ONE CUBIC METRE OF EARTH) MEASURING 25CM X 150CM X 5CM AND MARKED WITH TWO DIAGONAL GROOVES DRAWN WITH THE FINGERS FROM CORNER TO CORNER OF THE LARGEST FACE. THE GROOVES ENABLE THE BRICKS TO STICK TO THE MUD PLASTER BY SUCTION.



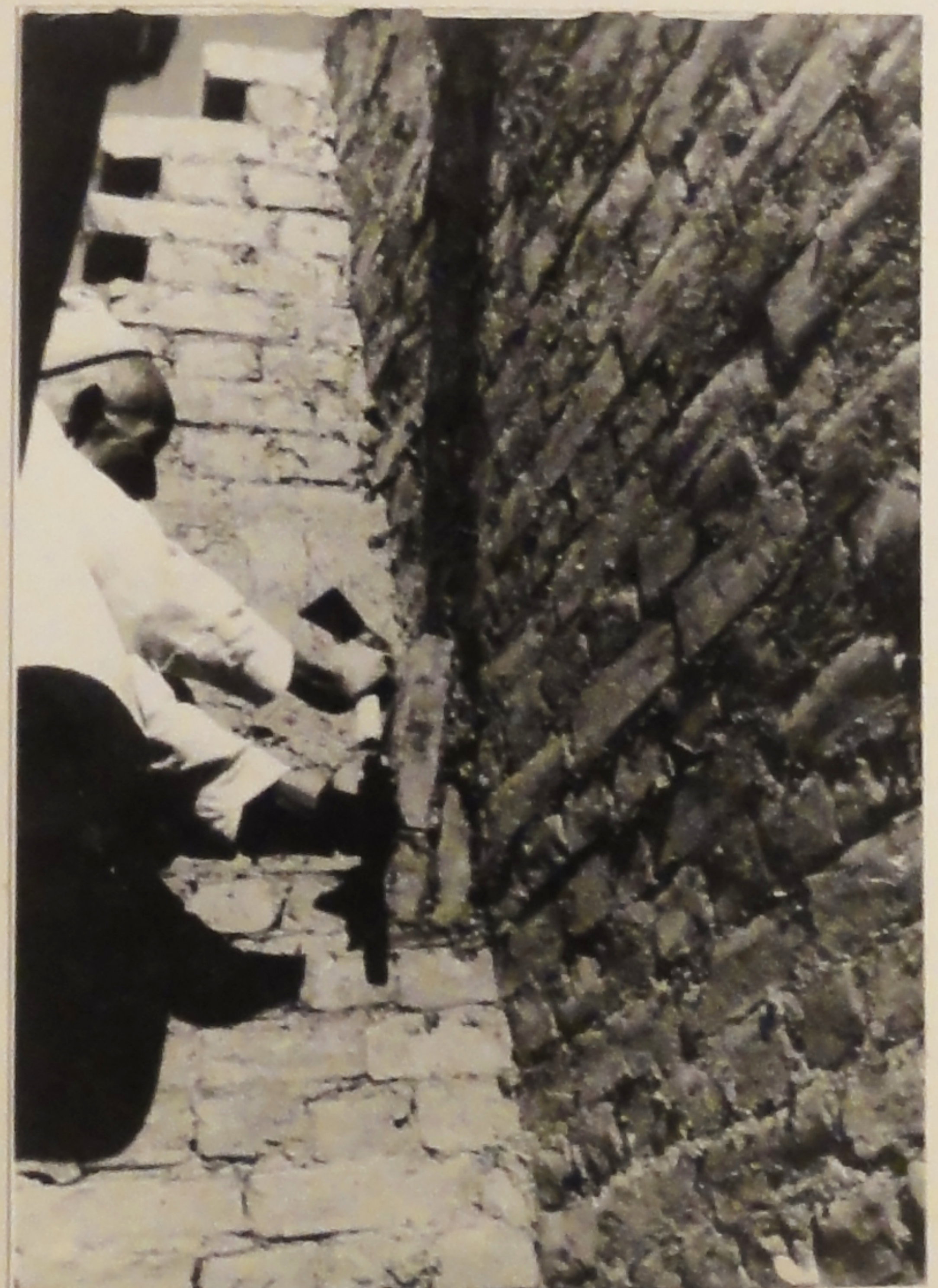
10 VAULTS ARE BUILT ON TWO SIDE WALLS AND LEANING AGAINST AN END WALL. TWO MASONS WILL WORK TOGETHER ON BUILDING IT. STANDING ON A COUPLE OF PLANKS, THEY TAKE UP HANDFULS OF MUD MORTAR (IT SHOULD BE STICKY IN TEXTURE AND OF ALMOST PURE CLAY, MIXED WITH LARGER PROPORTIONS OF STRAW WHICH WILL HAVE BEEN FERMENTING FOR TWO DAYS BEFORE BEING USED).



11 THE CURVE OF THE VAULT FOLLOWS A PARABOLA, THE MASONS ROUGHLY OUTLINE THE PARABOLA FREEHAND AGAINST THE END WALL. THEN WITH THE ADZE THEY TRIM THE MUD PLASTER TO GIVE IT A SHARPER OUTLINE.



12 WHEN THE CURVE IS CORRECT AND SYMMETRICAL AND THE EDGES ARE CLEANED OFF WITH THE ADZE, A TEMPLATE CAN BE USED TO CORRECT THE CURVE AND TO CHECK THE WORK OF THE MASONS. THE PHOTOGRAPH SHOWS THE TWO MASONS CHECKING THE PARABOLIC CURVE WHICH THEY HAVE DRAWN FREEHAND AND THE TEMPLATE DESIGNED BY THE ENGINEER. THE TWO CURVES ARE ALMOST THE SAME.



13 THE FIRST COURSE OF BRICKS IS ONLY ONE BRICK HIGH AND STOOD ON ITS END ON THE SIDE WALL, WITH ITS GROOVED FACE FLAT AGAINST THE MUD PLASTER ON THE END WALL AND HAMMERED ONTO THIS PLASTER. NEXT, EACH MASON TAKES SOME MUD AND AGAINST THE FOOT OF THIS BRICK MAKES A WEDGE SHAPED PACKING, SO THAT THE NEXT COURSE WILL LEAN SLIGHTLY TOWARDS THE END WALL INSTEAD OF STANDING UPRIGHT.

# HOUSE VAULTS



14 THE MASONS NOW PUT IN MORE MUD PACKING AGAINST THE SECOND COURSE, SO THAT THE THIRD COURSE WILL INCLINE EVEN MORE ACCUTELY THAN THE SECOND. THE THIRD COURSE IS THREE BRICKS HIGH.



15 THE PROCESS CONTINUE



16 & 17 THESE TWO PHOTOGRAPHS SHOW THE TWO MASONS GRADUALLY BUILDING THE INCLINED COURSES OUT, EACH ONE RISING A LITTLE HIGHER ROUND THE OUTLINE OF THE PARABOLA, TILL THE TWO CURVED LINES OF BRICK MEET AT THE TOP.



18 THE PHOTOGRAPH SHOWS THE FIRST COMPLETE PARABOLA. AT THIS STAGE THE VAULT WOULD BE SIX BRICKS THICK AT THE BOTTOM AND ONLY ONE AT THE TOP. SMALL STONES ARE TAPPED INTO THE GAPS BETWEEN THE BRICKS TO ENSURE THAN THE VAULT IS UNDER COMPRESSION.

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# HOUSE VAULTS



9

VAULTS ARE BUILT SUPPORTED ON TWO SIDE WALLS, AND LEANING ON AN END WALL. THE CURVE OF THE VAULT FOLLOWS A PARABOLA, DRAWN FREEHAND AGAINST THIS END WALL WITH MUD. VAULT BRICKS ARE THINNER THAN STANDARD BRICKS AND MEASURE 25 x 15 x 5 CMS. THE FIRST BRICKS ARE LAID ON END UPON THE SIDE WALLS, SO THAT THEY LEAN AGAINST THE END WALL. THE FIRST COURSE OF BRICKS IS ONLY ONE BRICK HIGH. THE SECOND COURSE IS ONE AND A HALF BRICKS HIGH.



10

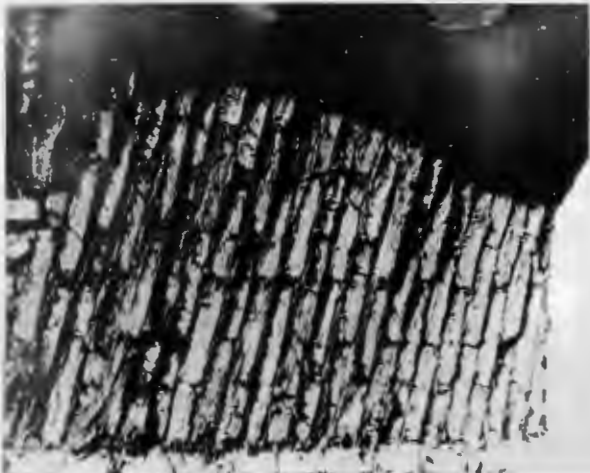
THE PROCESS CONTINUES, THE THIRD COURSE BEING THREE BRICKS HIGH, UNTIL SIX COURSES ARE COMPLETED. ON THE SIXTH COURSE THE FIRST COMPLETE PARABOLA WILL BE FORMED IN MUD BRICK, SO THAT THE VAULT IS ONE BRICK THICK AT THE TOP AND SIX BRICKS THICK AT THE BOTTOM AT THIS STAGE.

SMALL STONES ARE TAPPED INTO THE GAPS BETWEEN THE BRICKS TO ENSURE THAT THE VAULT IS UNDER COMPRESSION.



12

12 ALAH EL DIEN BUILDING A VAULT.



11



13

13 THE VAULT, SHOWING THE PARABOLA OF THE V

THE PLANKS IN THE FOREGROUND TO WHILE THE VAULT BUILDING IS IN

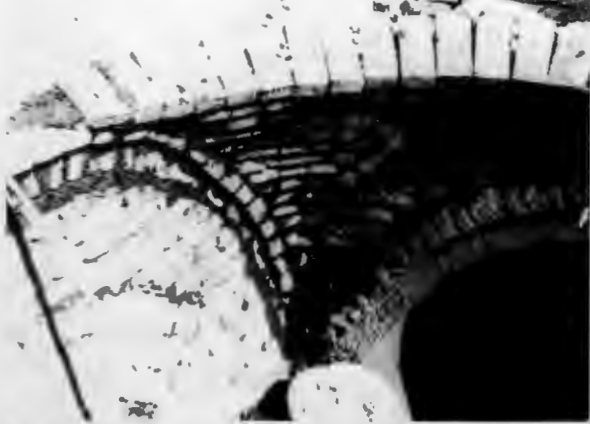
# HOUSE DOME



14

THE BYZANTINE DOME RESTS ON PENDENTIVES. THESE ARE THE SPHERICAL TRIANGLES FORMED BETWEEN THE SUPPORTING ARCHES WHERE THE DOME RESTS UPON THE SQUARE BASE.

SHOWS THE TWO STAGES, WHERE THE PENDENTIVE HAS NOT YET BEEN BUILT, NEXT TO THE TWO MEN, AND WHERE THE PENDENTIVE HAS BEEN BUILT, IN THE FOREGROUND, SHOWING ONE QUARTER OF THE CIRCLE OF THE DOME.



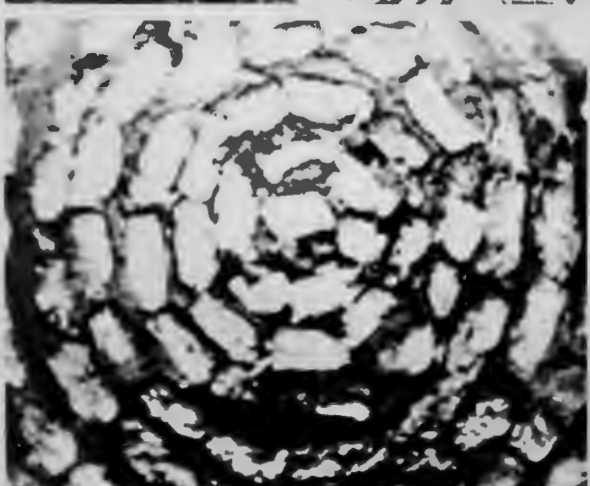
15

THE PENDENTIVE, SHOWING THE DEVELOPMENT FROM THE SQUARE BASE, TO A CIRCULAR BASE FOR THE DOME. TWO OF THE SUPPORTING ARCHES OF THE DOME CAN BE SEEN.



17

THE FIRST CIRCLE OF BRICKS IS COMPLETED AT THE POINT WHERE THE PENDENTIVE HAS REACHED THE SAME WEIGHT AS THE TOP OF THE ARCHES.



18

THE INTERIOR OF THE DOME, SHOWING THE DECREASING CIRCLES AS THE TOP OF THE DOME IS NEARED. THE BRICKS ARE STOOD ALMOST ON END, EACH BRICK ALWAYS BEING PLACED WITH THE USE OF THE STRING. SMALL PIECES OF CHIPPED STONE OR BROKEN POTTERY ARE PACKED BETWEEN THE BRICKS TO ENSURE GOOD COMPRESSION.



16

HERE THE STRING IS BEING USED TO POSITION A BRICK HALF WAY UP THE PENDENTIVE.

ALL THE GEOMETRY OF THE DOME IS BASED ON ONE SYSTEM. A POST IS PLACED UPRIGHT IN THE CENTRE OF THE DOME AREA. THE LENGTH OF THIS POST DEPENDS ON HOW HIGH THE DOME WILL BE FROM THE GROUND. THE DISTANCE FROM THE TOP OF THE POST TO THE TOP OF THE DOME IS 1/2 THE DIAGONAL OF THE SQUARE BASE. A PIECE OF STRING EXACTLY THIS LENGTH IS FIXED TO THE TOP OF THE POST. THIS STRING DETERMINES THE POSITION OF EVERY BRICK LAID IN THE DOME, AND, BY KEEPING THE BRICK ON A PLANE WITH THE LINE OF THE STRING TO THE POST, THE ANGLE OF THE BRICK IS DECIDED. THE BASE OF THE PENDENTIVE IS AT THE SAME HEIGHT AS THE TOP OF THE POST SO THAT THE FIRST BRICK IS LAID IN LINE WITH STRING WHERE THE STRING IS HORIZONTAL TO THE TOP OF THE POST.

16

THE COMPLETED DOME IN RELATION TO THE WHOLE BUILDING.

19



19

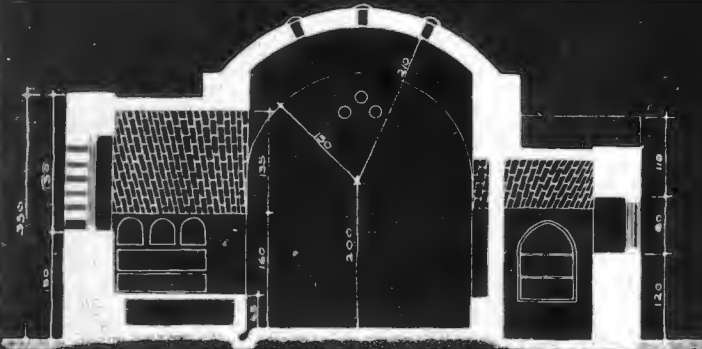




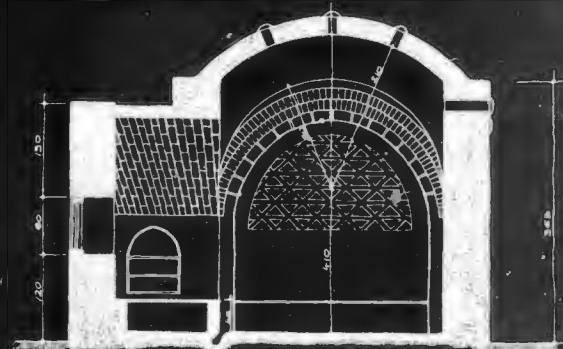
NORTH ELEVATION



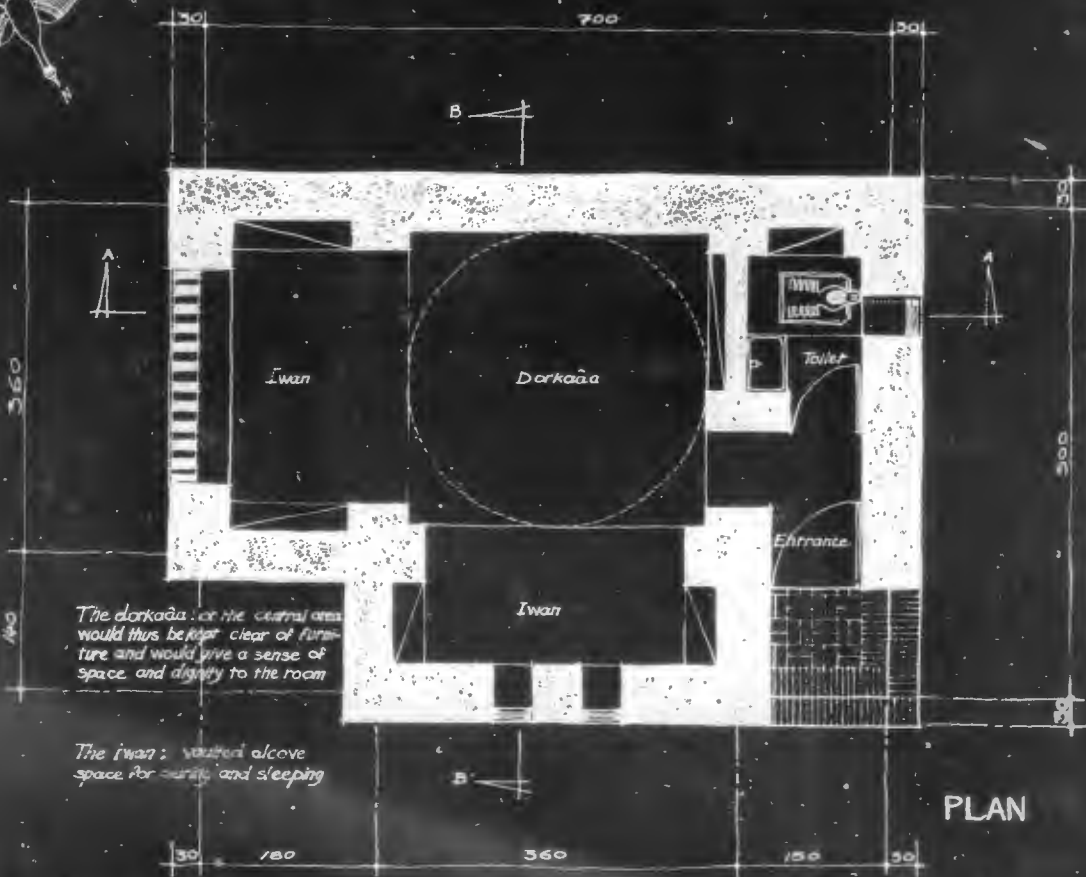
WEST ELEVATION



SEC. A-A



SEC. B-B

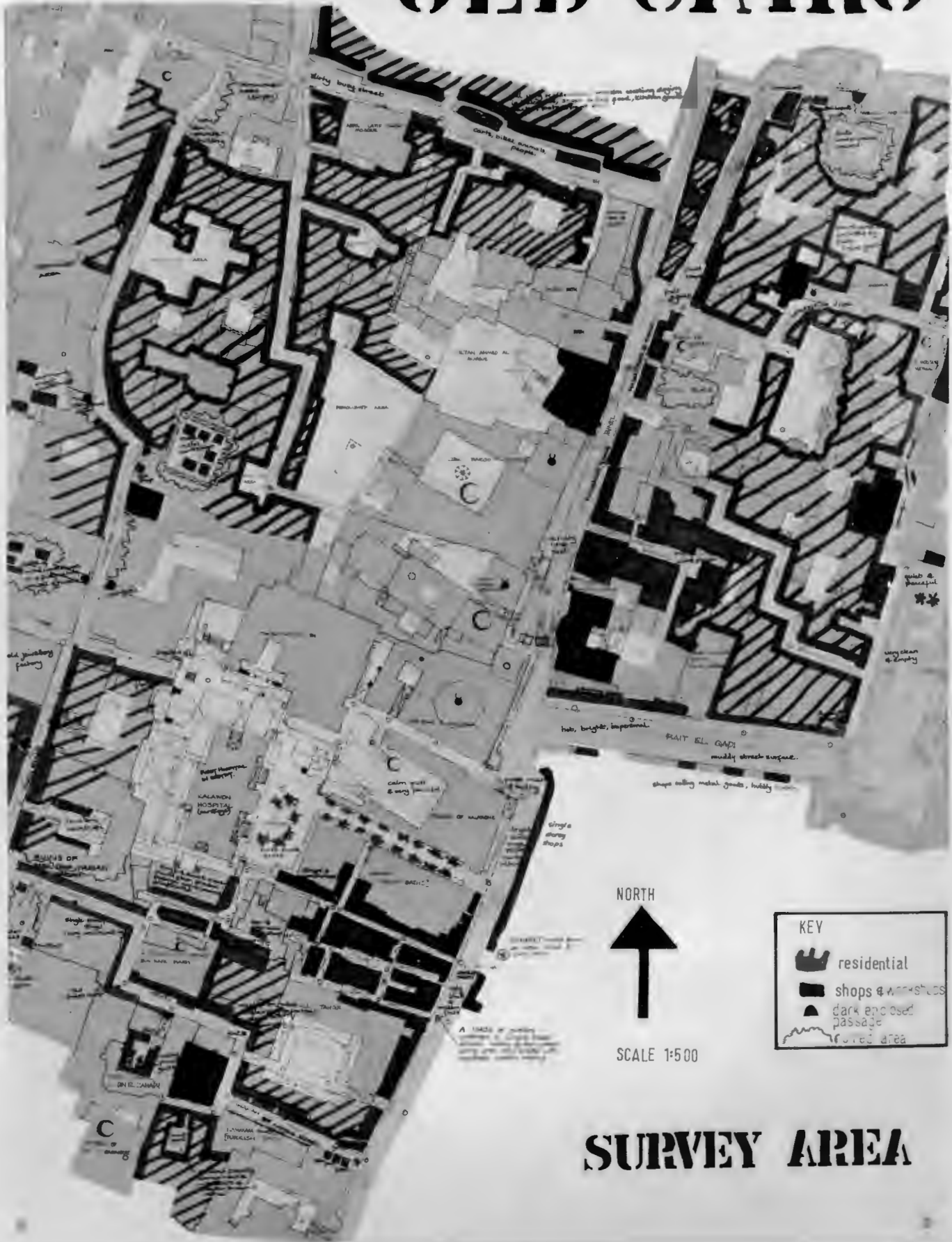


*The dorka'a, or the central area would thus be kept clear of furniture and would give a sense of space and dignity to the room*

*The iwan: vaulted alcove space for sitting and sleeping*

PLAN

# OLD CAIRO



NORTH



SCALE 1:500

KEY	
	residential
	shops & workshops
	dark enclosed passage
	covered area

## SURVEY AREA

# OLD CAIRO

## SURVEY

## IMPRESSIONS

OLD

OLD CAIRO - A MOSAIC OF CONTRASTS OF LIFE, PEOPLE, ACTIVITIES, SOUNDS, SHELLS, COLOUR, LIGHT, AND... IF IT POSSIBLE... BE A COMPLETE... DEEL... COULD EXPLAIN WHAT IT IS LI... TO BE IN IT.

AS IT WAS HERE LIMITED TO THE... OF OUR OWN EYES PLUS CAMERAS, A TAPE RECORDER, A MOVIE CAMERA AND A MAP TO HELP US. THE SURVEY ITSELF TOOK PLACE IN ONE SMALL SECTION OF THE OVERALL COMPLEX OF AREAS WHICH MAKE UP OLD CAIRO, CONSISTING OF THE METAKHOK AND JEWELRY AREAS.

WE OBVIOUSLY LOOKED LIKE TOURISTS, AND EVEN AFTER TWO WEEKS OF WANDERING ROUND THE SAFE STREETS WERE STILL CONSIDERED ODDITIES TO BE STARED AT - CONTINUOUSLY HANDED WITH LANGUAGE DIFFICULTIES, MIS-UNDERSTANDINGS, INTOLERANCE, INCOMPREHENSION OF THE UNFAMILIAR, REFUSANT ATTITUDES AND VIEWS.

NO MATTER - WE PERSIST ON AND MANAGE TO TAKE SOME PICTURES, MAKE A FEW NOTES AND DRAWINGS, SOME FILM AND RECORDINGS. SKETCHES WERE OUT, OUR TWO ATTEMPTS BEING DISASTROUS IN ATTRACTING SO MANY PEOPLE, THAT OUR SUBJECTS WERE OBSCURED FROM VIEW BY A SEA OF CURIOUS FACES AT VERY CLOSE QUARTERS. NOT KNOWING ENOUGH ARABIC TO PERSUADE THEM TO MOVE, WE HAD TO GIVE UP. EVEN WHEN WE DID LEARN A FEW APPROPRIATE PHRASES THEY SEEMED TO HAVE NO EFFECT.

HOWEVER, THE TECHNIQUE OF PHOTOGRAPHY WAS MASTERED QUITE WELL. WE CHOSE A SUBJECT, THEN PROCEEDED TO TURN IN AN ALMOST OPPOSITE DIRECTION AND PREPARED TO TAKE A PHOTOGRAPH. MEANWHILE ABOUT TWO DOZEN KIDS POSITIONED THEMSELVES IN FRONT OF THE CAMERA, ARMS WAVING, SHOUTING "HACHEN SOUBHA" (WILL YOU TAKE MY PICTURE) AND GRINNING FROM EAR TO EAR. AT THE LAST INSTANT, A QUICK TURN, CLICK, AND THE PICTURE WAS TAKEN. AFTER THAT THE CHILDREN CHASE THEM TO STAND.



NO, TO... AT... T... FIZI...  
FIFTE ONE... BY D... A... FULL... XT BY...  
OF PINK...  
HAKHOLS... SUIT BELLES... LIVES,  
MELONS AND DATES... SHOP-HIGH WITH CA... WATER... AND  
THOUSANDS OF PAIRS OF LEATHER SHOES.

OUR STROLLS ALWAYS BEGAN AND ENDED IN THE SAME PLACE - FIERBINI'S - A COFFEE AND TEA HOUSE IN KHAN KHULILI, THE TOURIST BAZAAR AREA, WHICH FORTUNATELY, IS NOT TYPICAL OF THE REST OF OLD CAIRO. ALL THE SHOPS SELL THE SAME THINGS, ALL AIMED AT THE TOURIST'S PURSE.

TOURIST BAZAAR AREA - NOTES WRITTEN SITTING IN FIERBINI'S, TO TRY TO PUT OVER SOME OF OUR FEELINGS WHILE WE WERE THERE.

APRIL 30TH | BACK IN OLD CAIRO AFTER THREE WEEKS IN...

"A RETURN TO THE CITY ENVIRONMENT, A PUBLIC MEET OF ITS INHABITANTS - BUT NOT FOR US - A WALK ROUND APPED WITH CAMERAS AND TAPE RE...

NOISE-MUSIC ON A CHEAP RADIO - BASTER THE MUSIC, ONE HEAR LA... KEEPSERS - "POMME, POMME, CE... JUST FOR YOU" - ALL THE TIME - DON NOT GEMINE - PLAYING TO...

A SHOE CLEANER COMES BY AND INSISTS ON CLEANING... SHOES, EVEN IF THEY ARE SANDALS AND NOT PUCH THEM TO CLEAN... (PUSH, PUSH)... OOO, OO ANNY)... THE TEA IS "HISH 315" (OO GOOD)... ANOTHER CUP - THAT IS BETTER... CITY TOWNING START APPEARING - A MOUND-UP FEELING - BECOMING HARRY OF PEOPLE, NO SENSIBILITY ANY LONGER - WHY DOES THE CITY DESTROY THESE PEOPLE? PEOPLE IN THE CITIES SEEM TO LOSE THEIR STANDARDS AND VALUES OF SELF RESPECT... ANY WAY, TO WORK...

# OLD CAIRO

## PEOPLE AT WORK



# OLD CAIRO

## THE STREETS



DESIGN

THE STREET

ALL THE STREETS OF THE CITY ARE UNPLANNED AND HAZARDOUS. THERE IS NO SOCIAL PATTERN IN THE LOCATION OF QUARTERS AND BUILDINGS. THE AREAS ARE RELATED TO ONE ANOTHER AND TO THE MARKET. THE STREETS DEVOTED TO VARIOUS TRADES. THIS TRADITION HAS MAINTAINED THE ORIGINAL CHARACTER AND CONCEPTS IN A MATERIAL TO THE LOCAL ENVIRONMENT.

THE STREET

IN THE DESIGN OF THE STREETS CLIMATE WAS A PRIME CONSIDERATION. A WIDE STREET HEATS UP MORE RAPIDLY THAN A NARROW ONE, AND THERE IS LITTLE SHADE. A STRAIGHT STREET ALLOWS THE WIND TO REMOVE THE COOL AIR OF THE NIGHT VERY EASILY. THE SOLUTION THEN IS A NARROW WINDING STREET WITH A CLOSED VISTA, WHICH IN FACT, WORKS LIKE A COURTYARD IN A HOUSE, TO REGULATE THE TEMPERATURE. PARTS OF OLD CAIRO HAVE BEEN REDEVELOPED, THE STREETS STRAIGHTENED AND WIDENED, AND THE DIFFERENCE CAN CLEARLY BE FELT. THEY ARE HOT, DUSTY AND VERY UNCOMFORTABLE.

THE WINDING STREETS CREATE INTERESTING SITUATIONS, AND BRING THE IMMEDIATE VIEW INTO PERSPECTIVE. IN OLD CAIRO THE STREET IS OF THE TYPE

YIC

A TYPE

THE TYPE OF THE HOUSES

ITS AN INTERESTING FACADE, GIVING A DIRECTION TO THE STREET.



# OLD CAIRO

## THE HOUSE



### THE HOUSE OF THE PAST

#### THE PLAN:

ALL THE ARAB COUNTRIES LIE BETWEEN THE LATITUDES OF 10 DEGREES AND 35 DEGREES NORTH, IN THE LAND STRETCHING BETWEEN THE ARABIAN GULF AND THE ATLANTIC OCEAN. THE DESERT HAS FORMED THE ARAB CULTURE AND HAS SHAPED THE STYLE OF ARCHITECTURE.

THE DESERT IS THE ARAB'S ENEMY, HOT AND DRY AND BLANKING, AND THE SKY HIS FRIEND, PROVIDING COOLNESS AT NIGHT. IN HOT DRY CLIMATES, WHERE THE SKY IS USUALLY CLEAR AND HEAT IS READILY LOST FROM THE EARTH, THE TEMPERATURE MAY FALL BY AS MUCH AS 40 DEGREES F. AT NIGHT DURING THE SUMMER MONTHS.

THE SOLUTION WAS TO HAVE A PLAN THAT OPENED INWARDS TO AN OPEN COURTYARD BY THE SKY, WHICH WAS THE HOUSE OF GOD. THE COURTYARD ACTS AS A TEMPERATURE REGULATOR. AT NIGHT THE COOL AIR IN IT FLOWS INTO THE HOUSE. DURING THE DAY, IT ACTS AS A RESERVOIR OF COOL AIR. IN THE COURTYARD ACT AS FILTERS FOR THE AIR BEFORE IT GOES INTO THE HOUSE.

THE LIVING ROOMS OF THE HOUSE WERE PLANNED WITH THE COURTYARD IN THE MIDDLE. THE COURTYARD WAS SURROUNDED BY ROOMS. A PASSAGE (DOKKA) LEADING INTO THE HOUSE FROM THE STREET OPENED ONTO A LOGGIA. THE LOGGIA ALLOWED THE OCCUPANTS TO SIT IN THE SHADE UNDER THE OPEN SKY, AS THEIR ANCESTORS DID IN THEIR TENTS. THE TUNNS GAVE COMPLETE SHELTER IN THE HOTTEST HOURS OF THE DAY.

IN THE MIDDLE OF THE COURTYARD WAS A FOUNTAIN IN A BASIN. ORIGINALLY THIS BASIN WAS SQUARE AT THE TOP LEVEL, AND THE CORNERS CUT OFF AT A LOWER LEVEL TO FORM AN OCTAGON. A SEMI-CIRCLE WAS CUT SO THAT THE WHOLE BASIN SEEMED TO BE A GEOMETRICAL PROJECTION OF A DOPE ON SQUENCHES, REPRESENTING A KING'S VIEW OF THE SKY FROM THE MIDDLE OF HIS HOUSE. THIS SHAPE WAS SYMBOLIC IN THAT IT REPRESENTED THE ARAB'S VIEW OF THE UNIVERSE - THE FOUR HILLS OF THE COURTYARD REPRESENTING THE FOUR COLLUMS CARRYING THE DOPE OF THE SKY. THE SKY IS THEN DRAWN INTO THE LIVING ROOMS BY REFLECTING IT IN A BASIN WHICH HAS THE FORM OF A DOPE ON SQUENCHES. NATURE IS THUS BROUGHT INTO THE HOUSE THROUGH ARCHITECTURAL FORMS AND SYMBOLISM.

AS EARLY AS THE 10TH CENTURY THE ARRANGEMENT OF THE LIVING ROOMS AND RECEPTION AREAS OF THE HOUSE WERE REPLACED BY THE QAI'AH OR RECEPTION HALL, RETAINING THE ORIGINAL CHARACTERISTICS. THE QAI'AH HAS A CENTRAL AREA CALLED THE DOKKA WHICH SERVES AS THE MAIN HALL, WITH THE TUNNS LEADING OFF IT. THE DOKKA IS A COVERED COURTYARD, PAVED WITH MARBLE MOSAICS IN GEOMETRICAL PATTERNS, AND ITS FLOOR IS ONE STEP LOWER THAN THE FLOOR OF THE TUNNS, AS IF IT WERE OPEN TO THE SKY AND NECESSARY TO PREVENT WATER SEEPING INTO THE TUNNS. THE CEILING OF THE DOKKA IS RAISED HIGH ABOVE THE REST OF THE HOUSE, SUPPORTED BY A WOODEN LANTERN, OF WHICH THE TOP IS A LOW DOPE OR CONE ON SQUENCHES, RETAINING THE SYMBOL OF THE SKY. THIS IS REFLECTED IN THE TRADITIONAL BASIN IN THE MIDDLE OF THE DOKKA, SO THAT SOMEONE IN ONE OF THE TUNNS APPEARS TO BE LOOKING OUTSIDE THE HOUSE.

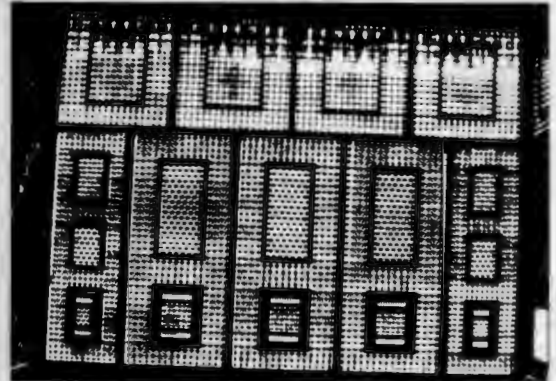
#### THE WINDOW:

THE REQUIREMENTS OF DESIGN FOR THE WINDOW ARE TO ALLOW LIGHT, BUT TO PROTECT FROM THE HEAT AND TO PROVIDE A VIEW OF THE OUTSIDE. THE ARAB BUILDERS SOLVED THIS PROBLEM BY SEPARATING THE FUNCTIONS OF THE WINDOW, AND DESIGNING A SPECIAL STRUCTURE FOR EACH.

FOR VENTILATION THEY CREATED A MULHAF, A WIND-TUNNEL. IT IS A SHIRT RISING ABOVE THE ROOF OF THE HOUSE, PLACED IN THE FRONT END OF THE QAI'AH. THE MULHAF IS OPEN TO THE SKY ON ONE SIDE AND CLOSED ON THE OTHER. THE MULHAF IS OPEN TO THE SKY ON THE UPPER END TO THE WIND, AND CLOSED ON THE LOWER END TO THE HOUSE. THROUGH THE MULHAF, THE AIR IS DRAWN INTO THE QAI'AH, AND THROUGH THE MULHAF INTO THE HOUSE. THE MULHAF IS REPLACED BY FRESH AIR COMING IN THROUGH THE MULHAF, A DRAUGHT EVEN WHEN THERE IS NO WIND OUTSIDE. THE MULHAF IS SMALL IN AREA, AND POINTS OVER NEIGHBOURING HOUSES. SO THE AIR FLOW IS NOT OBSTRUCTED. THIS METHOD OF VENTILATION MEANT THAT THE QAI'AH COULD BE PLACED IN THE MIDDLE OF THE HOUSE, SURROUNDED BY THE OTHER ROOMS TO PROTECT IT FROM RADIANT HEAT FROM OUTSIDE, AND THUS INCREASING THE THERMAL COMFORT TO THE MAXIMUM.

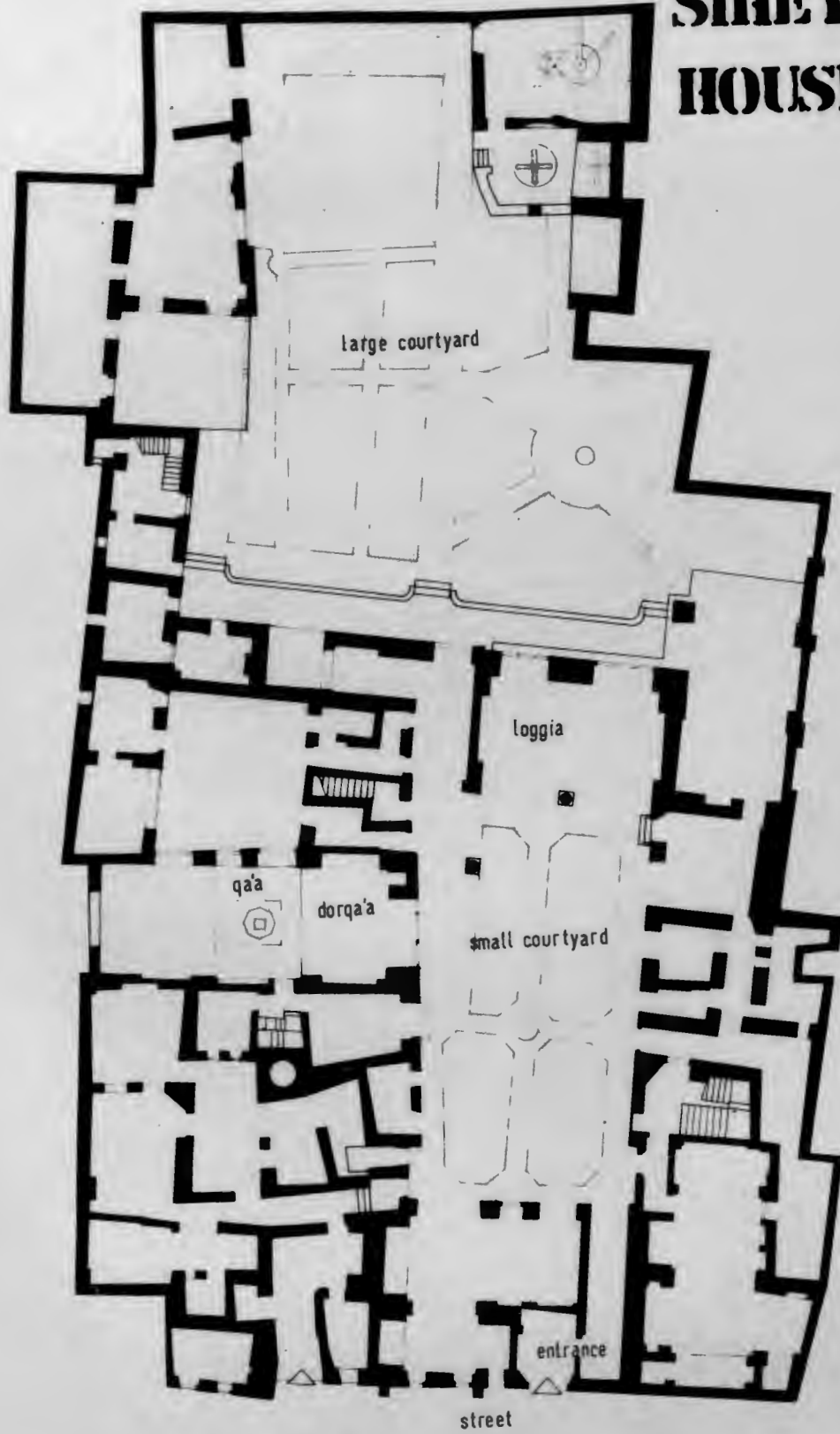
#### MUSHABEYA:

TO REDUCE THE GLARE WITHOUT REDUCING THE MOVEMENT OF AIR, THE WINDOW WAS FITTED WITH A LATTICED SCREEN CALLED A MUSHABEYA, MADE OF SMALL WOODEN BARS. THESE BARS ARE CIRCULAR IN SECTION, AND HAVE THE EFFECT OF BREAKING UP THE LIGHT THAT FALLS ON THEM. THUS, THERE ARE NO HARSH EDGES VISIBLE, AND THE CONTRAST OF THE BRIGHT LIGHT AND DARK LATTICE IS REDUCED, SOFTENING THE GLARE AND NOT DAZZLING THE EYES. THE CHARACTERISTIC SHAPE OF THE LATTICE-WORK PRODUCES A LILLOUETTE EFFECT. THE LINE OF SIGHT FROM ONE ROOM TO THE OTHER IS NOT DIRECT, BUT IS REFLECTED BY THE LATTICE.



# OLD CAIRO

## SIHEYMI HOUSE



LONDON 24.6.73

THE ALL ENCOMPASSING REALITY OF THE THIRD WORLD IS POLITICAL. IF WE FAIL TO UNDERSTAND THIS REALITY AND CHANNEL OUR EFFORTS ACCORDING TO SUCH A CONSCIOUS UNDERSTANDING, IT IS LIKELY THAT AT BEST OUR ACHIEVEMENTS WILL BE MINIMISED AND AT WORST DISTORTED TO HARM THAT WHICH WE SET OUT TO HELP.

THE REALITY OF THE THIRD WORLD IS A RESULT OF HISTORICAL INTERNATIONAL RELATIONSHIPS BETWEEN IT AND THE WEST, WHERE THE LATTER GAINED AT THE COST OF THE FORMER. THIS WAS TRUE FROM THE FIRST STAGES OF EUROPEAN EXPANSION IN THE FIFTEENTH CENTURY WHEN DIRECT CONQUEST WAS THE METHOD THAT FINANCED EUROPE TO THE INDUSTRIAL REVOLUTION, TRUE WHEN IN LATER STAGES THE WORLD WAS 'CIVILISED' ACCORDING TO THE EUROPEAN MOULD AND INCIDENTALLY MADE RECEPTIVE TO THE GOODS OF THOSE INDUSTRIES, AND TRUE TODAY WHEN IN PARTNERSHIP WITH THE 'CIVILISED' INDIGENOUS ELITE THE WEST CONTINUES TO SIPHON OFF FUNDS THROUGH UNEQUAL INTERNATIONAL TRADE AND AID RELATIONS.

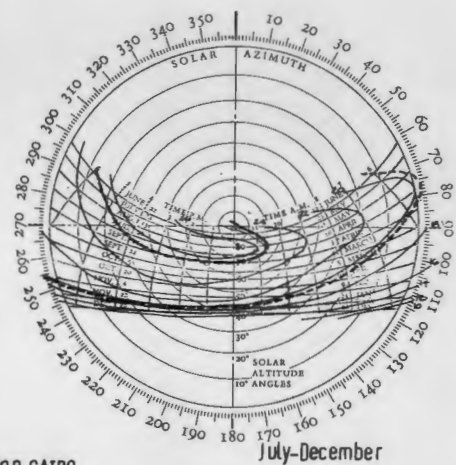
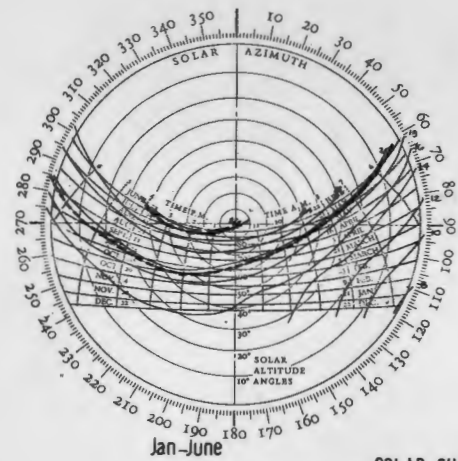
HOW DID WE AS STUDENTS GOING FROM ENGLAND TO EGYPT TO 'LEARN AND HELP' FIT INTO THIS? WE WERE REPRESENTATIVES OF THE PAMPERED WEST OR OF THE WESTERNISED INDIGENOUS ELITE OF THE THIRD WORLD, AND DESPITE OUR SINCEREST MOTIVES FOUND OURSELVES WORKING IN THE SAME SITUATION OF PARTNERSHIP WITH OUR COUNTERPARTS IN EGYPT. OUR EDUCATION HAD GIVEN US COMMON GROUND WITH THE ELITE AND SERVED AS A BARRIER BETWEEN US AND THE MAJORITY WE HAD PRIMARILY SET OUT TO 'LEARN FROM AND HELP'.

THUS THE TENDENCY WAS TO DEAL WITH OBJECTS RATHER THAN WITH PEOPLE. IN THIS SPHERE MAYBE WE WERE A BIT MORE ENLIGHTENED, IN THAT OUR WORK MADE A CASE FOR INDIGENOUS FORMS OF DESIGN AND CONSTRUCTION THAT HAD BEEN BYPASSED MORE ON THE GENERAL PRESUMPTIONS OF THE SUPERIORITY OF WESTERN METHODS THAN ON THEIR OWN MERITS.

OUR FINDINGS ARE NOT CONCLUSIVE. AND EVEN IF THEY WERE THEY SUPPORT THAT WHICH THE INFLUENCING ELITE ARE OPPOSED TO FOR BOTH PSYCHOLOGICAL AND VESTED INTEREST REASONS. THE MUD BRICK HOUSE IS TOO OBVIOUSLY 'NATIVE' AND BESIDES VERY LITTLE MONEY CAN BE MADE BY THOSE INVOLVED IN ITS MASS APPLICATION TO RURAL RECONSTRUCTION. MAYBE OLD CAIRO DOES ILLUSTRATE DESIGN PRINCIPLES WORTH EMULATING TODAY BUT PLANNERS TRAINED IN EUROPE, OR PROPERTY DEVELOPMENT METHODS MODELLED AFTER THE EUROPEAN SYSTEM CANNOT YET ALLOW FOR FORMS OTHER THAN THOSE DEVELOPED IN THE WEST IF THE SAME PROFIT MARGINS ARE TO BE REALISED.

THE ARCHITECTURAL FORM IS AN EXPRESSION OF THE POLITICAL REALITY. EQUIPPED TO THINK AND ACT SOLELY IN ARCHITECTURAL TERMS, WE CANNOT HOPE TO LEARN FROM OR HELP THE THIRD WORLD IN A SIGNIFICANT WAY.





### SOLAR CHARTS FOR CAIRO

THE SOLAR ANGLE CHARTS EXPANDED TO INCLUDE HOURLY TEMPERATURES ARE INDISPENSABLE TOOLS IN CLIMATICALLY EVALUATING AN EXISTING OR PROPOSED DESIGN. FROM THESE ONE CAN READ THE SUN ANGLE AT ANY DAYLIGHT HOUR OF THE YEAR, AS WELL AS THE CORRESPONDING AVERAGE HOURLY TEMPERATURE. ONE CAN CALCULATE FAVOURABLE ORIENTATION OF BUILDINGS, RADIATION LEVELS FOR WALLS AND ROOFS AND DEVELOP SHADING DEVICES.

#### CLIMATIC SURVEY OF TRADITIONAL BUILDINGS

PART OF THE WORK IN WHICH WE WERE INVOLVED CONSISTED IN ESTABLISHING A SYSTEM THAT WE COULD USE OURSELVES IN EVALUATING THE CLIMATIC PERFORMANCE OF THE BUILDINGS WHICH WE SURVEYED.

OUR PRIMARY PURPOSE WAS TO MAKE A COMPARISON BETWEEN THE TRADITIONAL OR VERNACULAR WAYS OF BUILDING AND NEW FORMS OF BUILDING IMPORTED FROM EUROPE.

SEVERAL TERMS MUST BE INTRODUCED AT THIS POINT:

#### 1 TEMPERATURE:

TEMPERATURE IS A MEASUREMENT OF HEAT AND FOR OUR PURPOSES WE ARE USING THE METRIC SYSTEM. HEAT CAN BE TRANSMITTED BY RADIATION, CONVECTION OR CONDUCTION. RADIATION IS A TRANSFER OF HEAT ENERGY THROUGH SPACE FROM A WARM BODY TO A COLD BODY, I.E. THE SUN TO THE EARTH OR AN OPEN FIRE TO ONE'S FACE. CONVECTION IS THE OLD PRINCIPLE OF HOT AIR RISING AND COOL AIR FALLING. CONDUCTION IS THE TRANSFER OF HEAT THROUGH A SOLID, AND IN OUR CASE WE ARE CONCERNED WITH THE HEAT TRANSFER THROUGH THE WALLS OF A BUILDING.

#### 2 RELATIVE HUMIDITY:

RELATIVE HUMIDITY IS SIMPLY THE PERCENTAGE OF WATER VAPOUR IN THE AIR. THIS IS IMPORTANT BECAUSE AT A HIGH TEMPERATURE A PERSON WILL TEND TO FEEL COMFORTABLE IF THERE IS A LOW RELATIVE HUMIDITY, BUT HE WILL FEEL HOT IF THERE IS A HIGH PERCENTAGE OF WATER VAPOUR IN THE AIR. THE REASON FOR THIS IS FOUND IN THE PHYSIOLOGICAL FUNCTION OF PERSPIRING OR LETTING OFF OF WATER AT THE SURFACE OF THE SKIN TO EVAPORATE INTO THE AIR. PHYSICALLY, EVAPORATION HAS A COOLING EFFECT AND HELPS TO COOL THE BODY. THE HIGHER THE PERCENTAGE OF WATER VAPOUR IN THE AIR THE LESS READY IS THE AIR TO ASSORB EVAPORATED WATER FROM THE SURFACE OF THE SKIN, HENCE THE LESS THE COOLING EFFECT. IN SUMMARY, IF THE RELATIVE HUMIDITY IS LOW, THE BODY CAN COOL ITSELF BY PERSPIRING, BUT IT CANNOT DO SO AS READILY IF THE RELATIVE HUMIDITY IS HIGH.

#### 3 AIR MOVEMENT:

AIR MOVES FROM AREAS OF HIGH PRESSURES TO LOW PRESSURE AREAS. THE EFFECT OF AIR MOVEMENT ON THERMAL COMFORT IS RELATED TO THE PREVIOUS EXPLANATION. IF THERE IS NO AIR MOVEMENT THE LAYER OF AIR NEXT TO THE SKIN TENDS TO BECOME SATURATED WITH WATER VAPOUR DUE TO PERSPIRATION. AIR MOVEMENT CAUSES THE AIR NEXT TO THE SKIN TO BE CONTINUALLY REPLACED BY NEW LESS SATURATED AIR. AIR MOVEMENT CAN BE SEEN TO AID EVAPORATION FROM THE SKIN'S SURFACE. THEREFORE, VARIOUS DEGREES OF AIR MOVEMENT CORRESPOND TO DEGREES OF AID TO EVAPORATIVE COOLING.

#### 4 THERMAL COMFORT CONDITION:

THIS MAY BE DEFINED AS A PHYSIOLOGICAL STATE AT WHICH AN INDIVIDUAL FEELS NEITHER TOO WARM NOR TOO COLD. THERE ARE SEVERAL FACTORS DETERMINING THE LIMITS OF THIS ZONE: THE AIR TEMPERATURE, THE RELATIVE HUMIDITY, THE DEGREE OF AIR MOVEMENT AND FINALLY THE DEGREE OF ACCLIMATISATION OR THE DEGREE TO WHICH ONE BECOMES USED TO ONE'S LOCAL CLIMATE. THE FIRST THREE FACTORS: TEMPERATURE, HUMIDITY AND WIND SPEED CAN BE COMBINED BY THE USE OF GRAPHS AND TABLES INTO ONE VALUE BEING CALLED THE "EFFECTIVE TEMPERATURE" AND RELATES TO WHAT ONE FEELS AS A TEMPERATURE ON THE SKIN DUE TO A COMBINATION OF ALL THREE FACTORS. THEREFORE, IF THE EFFECTIVE TEMPERATURE AT A PARTICULAR TIME FALLS WITHIN THE RANGE THAT ONE FEELS ACCLIMATISED TO, IT IS SAID TO FALL IN THE COMFORT ZONE. FOR THE CAIRO CLIMATE WE HAVE CALCULATED THE COMFORT ZONE TO LIE BETWEEN 39.7°C AND 29.7°C (EFFECTIVE TEMPERATURE).

IF, FOR EXAMPLE, THE AIR TEMPERATURE RECORDED AT SOME TIME IS FOUND TO BE HIGHER THAN THE MAXIMUM COMFORT ZONE TEMPERATURE, COMFORT CONDITIONS MAY BE MAINTAINED IF THE RELATIVE HUMIDITY IS INCREASED. IN THIS WAY THE EFFECTIVE TEMPERATURE CAN BE BROUGHT INTO THE COMFORT ZONE.

#### HEAT TRANSFER THROUGH WALLS

THE TRADITIONAL MATERIALS WHICH PEOPLE WERE FORCED TO USE NOT ONLY HAD IMPLICATIONS ON THE STRUCTURAL SYSTEM EMPLOYED IN EGYPT, BUT ALSO HAD AN EFFECT ON THE THERMAL PERFORMANCE OF THE BUILDINGS. LIMESTONE TENDED TO BE USED IN THE TOWNS AND MUDBRICK IN RURAL AREAS. BOTH MATERIALS ARE USEFUL ONLY IN COMPRESSION AND MASSIVE LOADBEARING WALL SYSTEMS RESULTED. THICK WALLS OF THESE MATERIALS TRANSMIT HEAT VERY SLOWLY. HEAT ABSORBED IN THESE WALLS IS RETAINED AND ENITTED AT A LATER TIME.

DIRECT RADIATION FROM THE SUN ON EXPOSED EXTERIOR WALLS CAUSES THE SURFACES OF THOSE WALLS TO HEAT UP TO A TEMPERATURE HIGHER THAN THE AIR TEMPERATURE. THE TRANSFER OF THIS HEAT FROM THE SURFACE INTO THE WALL MATERIALS BY CONDUCTANCE OCCURS. AT SOME TIME LATER A PORTION OF THIS HEAT WILL BE RADIATED INTO THE INTERIOR OF THE BUILDING FROM THE INTERIOR WALL SURFACE. ON THE OTHER HAND DURING THE NIGHT WHEN THE INTERIOR IS WARMER THAN THE OUTSIDE THE HEAT FLOW WILL OCCUR IN THE OPPOSITE DIRECTION. THE TIME THAT IT TAKES FOR HEAT TO FLOW THROUGH A PARTICULAR WALL IS CALLED "TIME LAG".

THE EFFECT OF THIS HEAT FLOW THROUGH LIMESTONE WALLS HAS BEEN BRIEFLY MENTIONED IN RELATION TO THE QA'AA MOHIB AL DIN.

TO MAKE A COMPARISON BETWEEN THE VERNACULAR BUILDING AND A PROPOSED "MODERN" BUILDING SOLUTION WE TESTED TWO SMALL ROOMS BUILT IN DIFFERENT WAYS. THE FIRST ROOM WAS MADE OF MUD BRICK AND CONSISTED OF A VAULT AND DOME ROOF SUPPORTED ON 50 CM THICK LOAD BEARING WALLS. THE SECOND ROOM WAS A SIMILAR SIZE BUT WAS MADE FROM REINFORCED CONCRETE WITH A PREFABRICATED ROOF PANEL SYSTEM SUPPORTED ON A 15 CM THICK PREFABRICATED BLOCK WALL. THESE ARE EXAMPLES OF TWO DIFFERENT SYSTEMS PROPOSED FOR RURAL RECONSTRUCTION PROJECTS IN POOR AREAS OF EGYPT.

WE TESTED THESE ROOMS TO SEE HOW THEY RESPONDED TO THE HOT DRY CLIMATE. OUR TESTS FOCUSED ON THE HEAT TRANSFER THROUGH THE WALLS OF THESE BUILDINGS AND ITS EFFECT ON INTERNAL AIR TEMPERATURE.

IN TESTING THE MUD BRICK HOUSE WE FOUND THAT THE INTERNAL AIR TEMPERATURE VARIED ONLY ONE OR TWO DEGREES OVER A COMPLETE DAY AVERAGING 21°C. THIS WAS DUE TO THE FACT THAT EVEN THOUGH THE EXTERNALLY EXPOSED SURFACES HEATED UP DUE TO THE SUN AND COOLED AT NIGHT VERY LITTLE TEMPERATURE FLUCTUATION WAS NOTED ON THE INTERNAL SURFACES. THE TIME LAG FOR THESE THICK WALLS WAS VERY LONG, 20 HOURS OR MORE, AND VERY LITTLE HEAT ENERGY ACTUALLY PENETRATES.

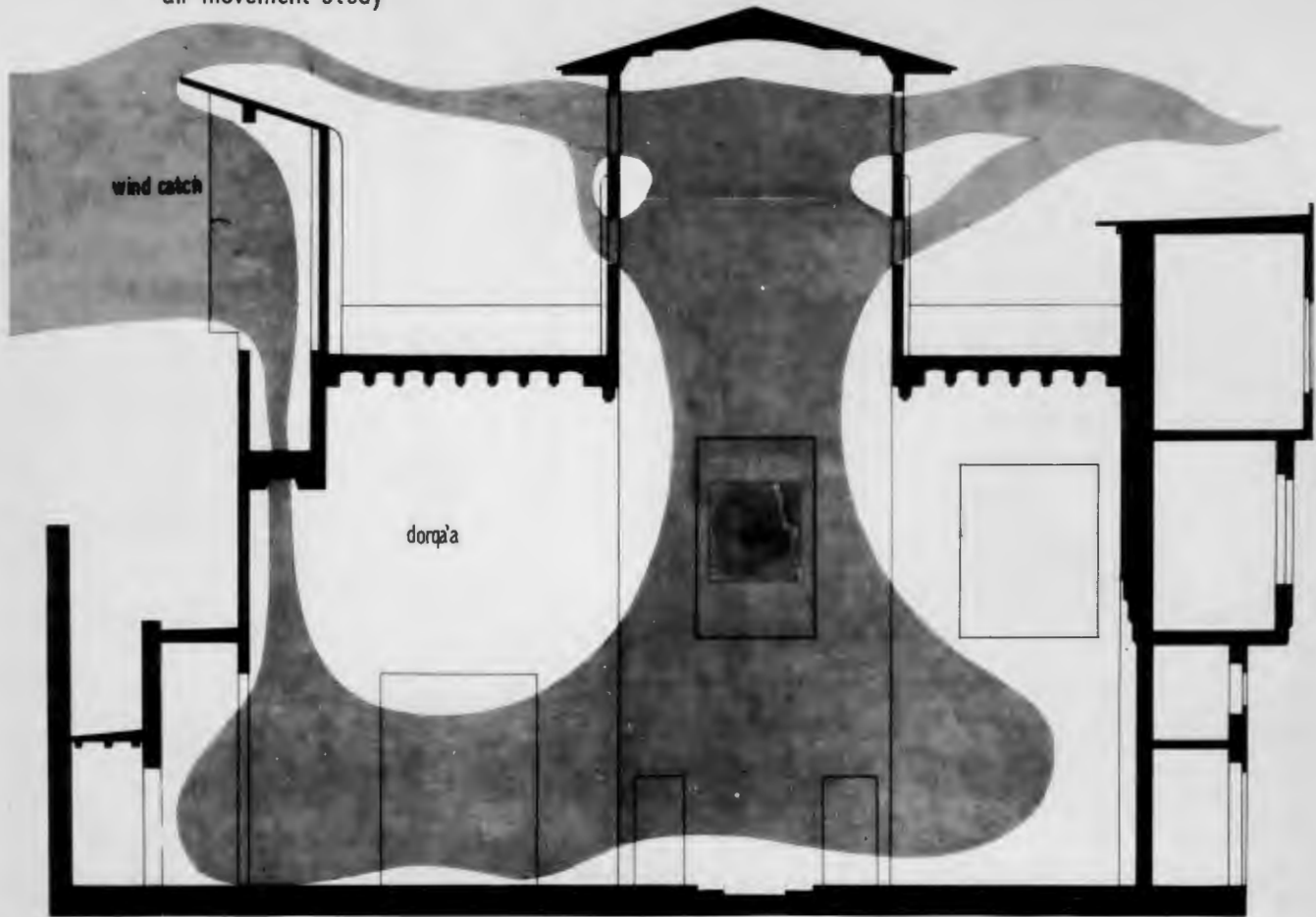
ON THE OTHER HAND THE CONCRETE CONSTRUCTION WAS FOUND TO TRANSMIT HEAT QUICKLY. WE CALCULATED THAT ABOUT 75% OF THE HEAT BUILT UP ON THE EXTERIOR EXPOSED SURFACES DUE TO SOLAR RADIATION WAS RE-RADIATED INTO THE ROOM ONLY 4 OR 5 HOURS LATER. AS A RESULT THE INTERIOR TEMPERATURES RANGED FROM 34°C TO 17°C OVER A SIMILAR 24 HOUR PERIOD.

IT MUST BE REMEMBERED THAT IN THIS EXPERIMENT WE ARE MEASURING ONLY ONE FACTOR BEING 'HEAT FLOW THROUGH BUILDING MATERIALS' AND IN REALITY AIR MOVEMENT WILL HAVE AN EFFECT ON COMFORT CONDITIONS AS WELL. BUT THIS EXPERIMENT DOES ILLUSTRATE THE SUPERIORITY OF THE VERNACULAR WAY OF BUILDING OVER A RECENTLY INTRODUCED FACTORY MADE EUROPEAN PRODUCT.

THE ECONOMIC IMPLICATIONS OF USING INDIGENOUS MATERIALS AND KNOWLEDGE IN THIS EXAMPLE NEED NOT BE MENTIONED IF ONE LOOKS AT THE COSTS OF MUD BRICK IN COMPARISON TO THAT OF PREFABRICATED CONCRETE, AND THEN ONE LOOKS AT THE EARNINGS OF THE MAJORITY OF THE RURAL POPULATION.

# CLIMATIC STUDY

Qa'a Mohib al Din  
air movement study



THERE ARE MANY WAYS THAT BUILDING CAN MANIPULATE THE CLIMATE WITHIN, TO PRODUCE FAVOURABLE CONDITIONS IF THEY DO NOT EXIST OUTSIDE. WE ARE INTERESTED HERE PRIMARILY IN VERNACULAR SOLUTIONS, WHICH HAVE EVOLVED OVER CENTURIES DUE TO CONTINUOUS CONTACT WITH A HARSH CLIMATE.

THE TYPICAL HOUSE FORM THROUGHOUT THE TROPICS, THE COURTYARD HOUSE IS IN ITSELF A CLEAR EXAMPLE OF THIS VERNACULAR RESPONSE TO CLIMATE. THE COURTYARD IS A COOL AIR WELL, WHERE THE COOL NIGHT AIR SETTLES, EXPPELLING THE LIGHTER WARM AIR COLLECTED DURING THE DAY. THIS COOL AIR IS RETAINED DURING THE DAYTIME WHEN ACTIVITIES ARE CARRIED ON, IN ROOMS ON THE GROUND FLOOR OPENING ON TO THE COURTYARD. THE COURTYARD ALSO IN SOME CASES CONTAINS A POOL OF WATER WHICH TENDS TO CAUSE EVAPORATIVE COOLING. OF COURSE, IN THE OPEN COURT AND ROOMS OPENING ON TO IT ONE FINDS THAT THE AIR MOVES MORE FREELY THAN ONE WOULD FIND IN AN ENCLOSED SPACE.

AN INTERESTING TRADITIONAL SOLUTION EMPLOYED IN MANY HOT CLIMATES IS THE WIND CATCH. IN ITS SIMPLEST FORM IT IS COMPOSED OF SOME SORT OF CATCHING OR FUNNELING DEVICE ORIENTED TO TRAP THE PREVAILING WIND AND A SYSTEM TO VENT THE ESCAPING AIR. THE PURPOSE OF THIS DEVICE IS TO INDUCE AIR MOVEMENT WITHIN AN ENCLOSED SPACE TO AID EVAPORATIVE COOLING.

THERE ARE MANY INGENUOUS VARIATIONS ON THIS BASIC MODEL INCLUDING MULTI-DIRECTIONAL CATCH DEVICES (PERSIA) FOR AREAS WHERE THE WIND OFTEN SHIFTS DIRECTIONS; SYSTEMS FOR INTRODUCING POROUS WATER JARS OR NET MATERIALS INTO THE MOUTH OF THE CATCH TO ENCOURAGE EVAPORATIVE COOLING OF THE AIR BEFORE IT REACHES A PERSON WITHIN THE BUILDING; AND MANY SOLUTIONS FOR THE DESIGN OF THE EXIT VENT TO PRODUCE A LOW PRESSURE IN THAT AREA AND ACTUALLY DRAW THE AIR THROUGH THE BUILDING.

ONE OF THE BUILDINGS CONTAINING A WIND CATCH WHICH WE SURVEYED WAS THE QA'A MOHIB AL DIN IN OLD CAIRO AND SHOWS THE PRINCIPLE SIMPLY. THIS HOUSE WAS BUILT IN THE 14TH CENTURY AND ILLUSTRATES MORE CLEARLY THAN ANY OTHER THAT WE STUDIED, THE DESIGN CONCEPT OF THE QA'A WHICH IS DISCUSSED IN ANOTHER SECTION OF THE REPORT.

THE CATCH ITSELF IS ORIENTED TOWARDS THE NORTHERLY PREVAILING WINDS. THE AIR IS DRAWN DOWN A SHAFT THROUGH TWO GATES OR DOORS WHICH CAN BE OPENED OR CLOSED TO DETERMINE THE AMOUNT OF AIR ENTERING. THE AIR THEN MOVES DOWN ACROSS THE FLOOR THROUGH THE USEABLE PARTS OF THE ROOM. THE AIR ESCAPES BY HIGH OPENINGS AT THE TOP OF AN UPRAISED CIRCULAR PROJECTION ABOVE THE CENTRAL QA'A. THIS UPPER AREA COLLECTS HOT LIGHT AIR BY THE CONVECTION PRINCIPLE; THEREFORE IT IS A LOW PRESSURE AREA, HELPING TO DRAW THE AIR OUT THAT WAY.

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# CLIMATIC STUDY



Figures represent  
meters per second.

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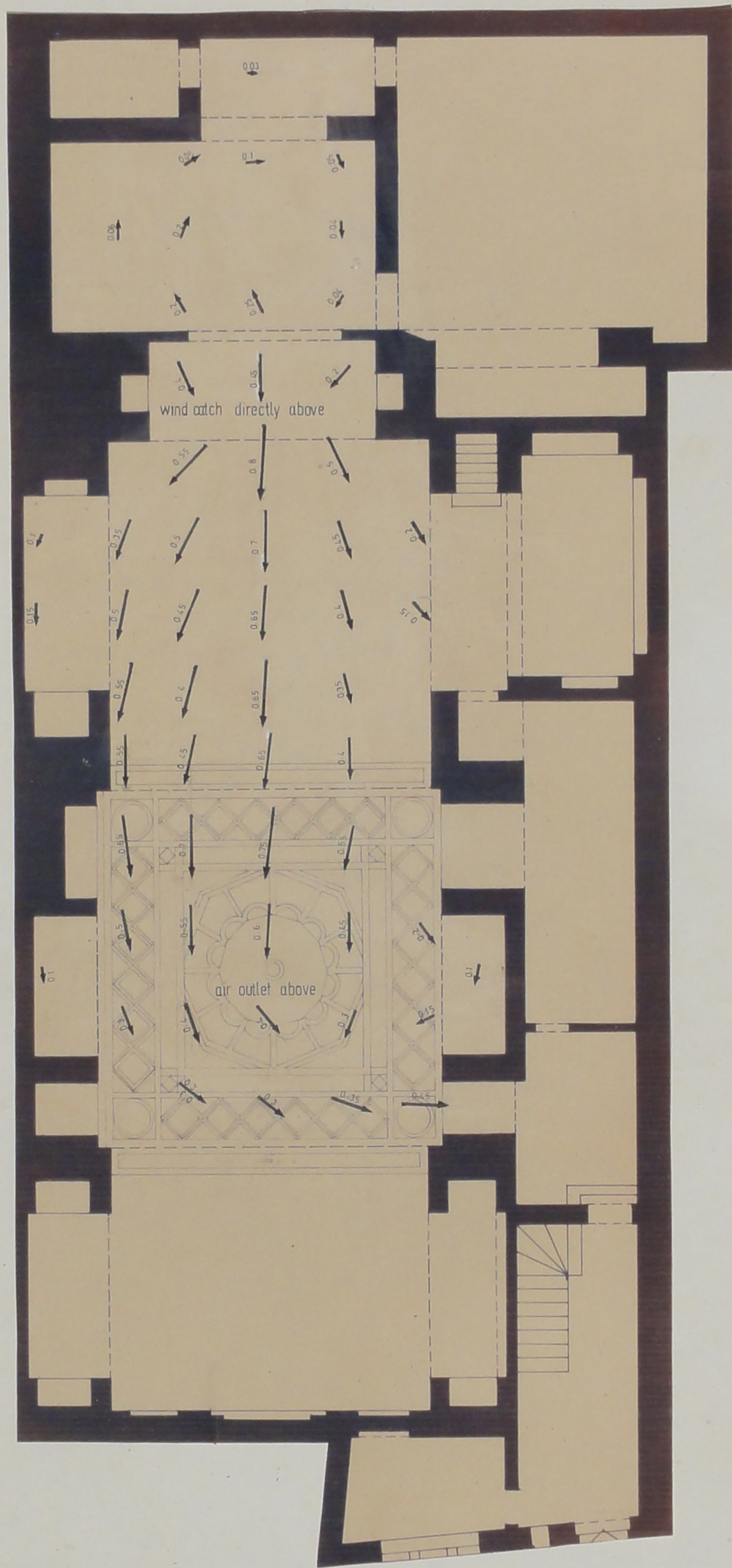
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# CLIMATIC STUDY



Average wind velocity outside  
in the open.

Air movement was measured using  
a velometer.  
All figures represent - meters per  
second.  
Measurements were taken at  
1.3 meters height from floor.  
Tests were made on April 2, 1973  
between 18:00 and 18:30.

Length of arrows is proportional  
to the wind velocity.

# CLIMATIC STUDY





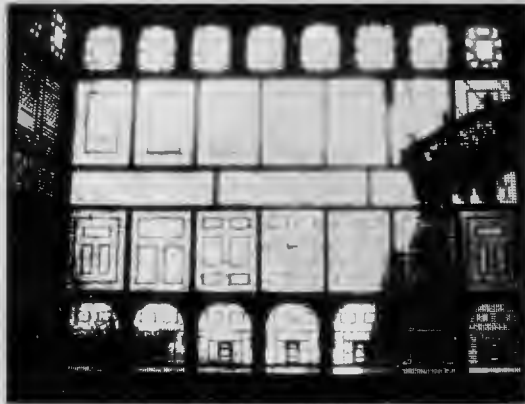
example A 1000 hrs



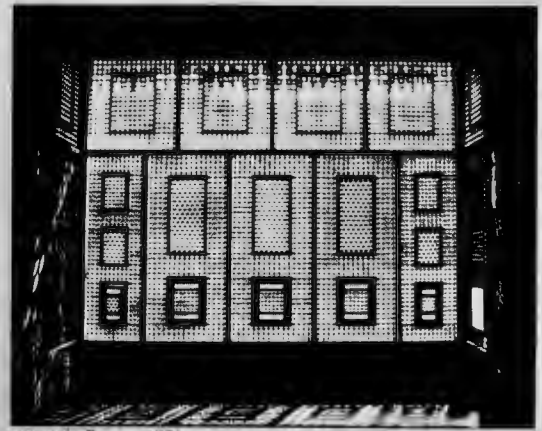
illumination levels  
within room 1000hrs



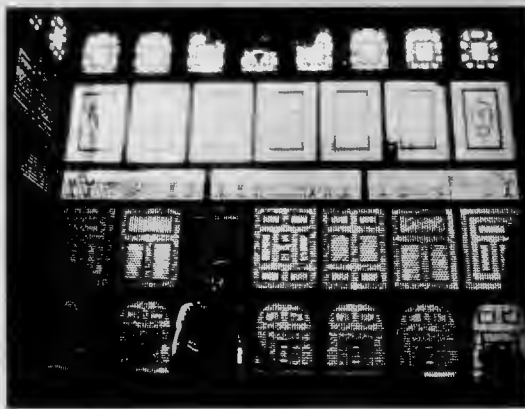
Mushrabeya example A exterior



example A 1300 hrs



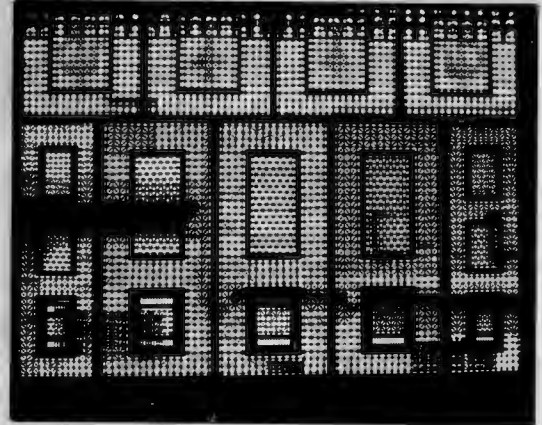
example B 1100 hrs



example A 1600hrs

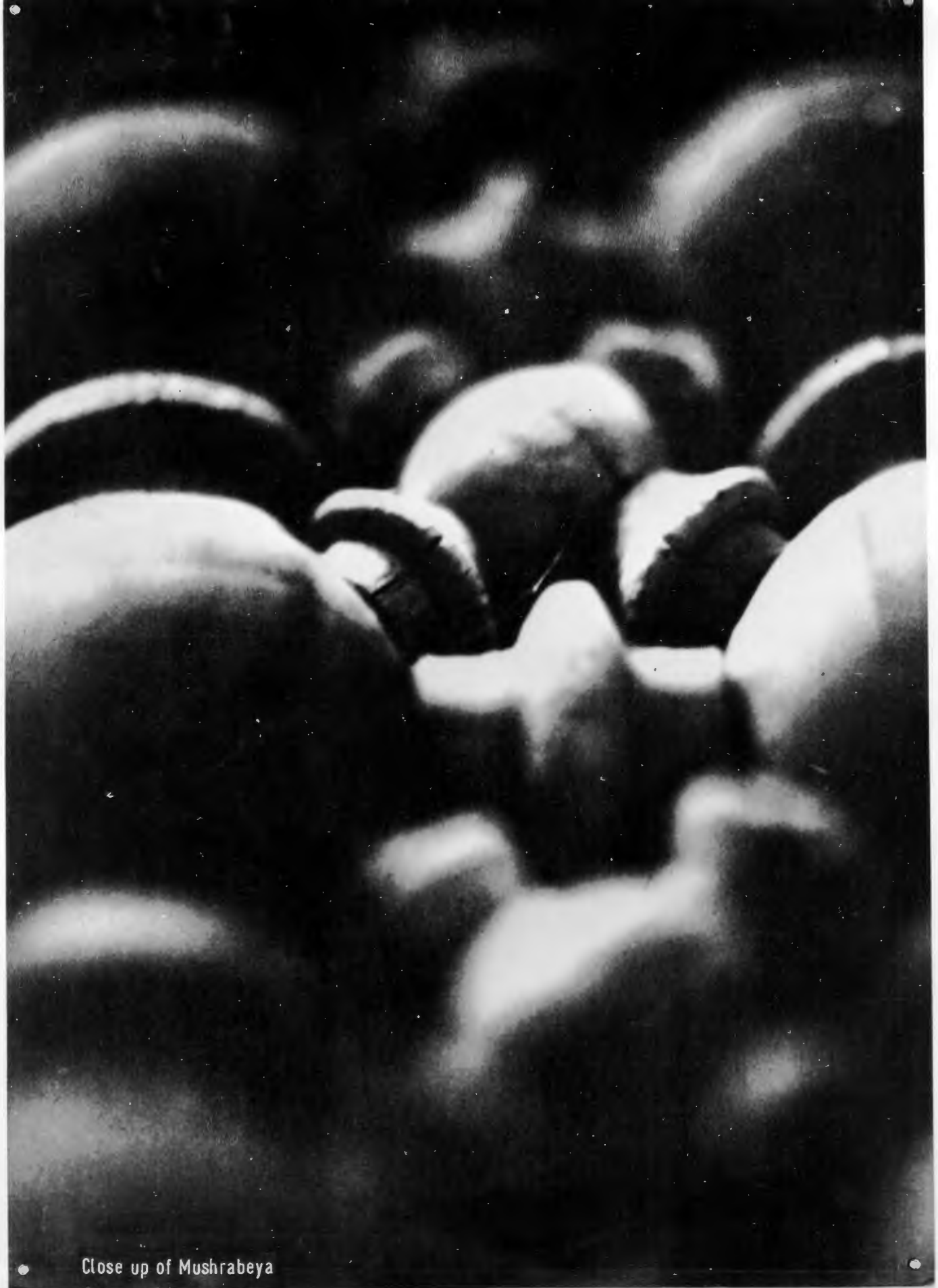


illumination levels  
within room 1600hrs



example B 1600hrs

# MUSHRABEYA



● Close up of Mushrabeya ●



Siheyuan







# NEW GOURNA

REFERENCE MAP 1:500



# NEW GOURNA LOCALITY MAP



APPROXIMATELY 10 YEARS AGO, THE VILLAGE OF OLD GOURNA WAS DESIGNED BY ARCHITECT HASSAN FATHY, TO ACCOMMODATE 900 FAMILIES WHICH WERE TO BE MOVED FROM OLD GOURNA, SITUATED ON THE HILLS OF THE CEMETERY OF THEBES.

THE REASON FOR THIS MOVE, INITIATED BY THE DEPARTMENT OF ANTIQUITIES OF THE EGYPTIAN GOVERNMENT, WAS THAT THE GOURNAS, WHOSE HOMES AND STILL ARE TOMB ROBBERS AND FORTUNATELY BY SESSION, ARE REMOVING PRICELESS TREASURES FROM THE TOMBS AND SELLING THEM TO DEALERS. I.E. THE CITY WOULD IN TURN SELL THEM TO FOREIGNERS. IN THIS WAY ONLY TREASURES WOULD FIND THEIR WAY OVERSEAS INSTEAD OF IN THE HANDS OF EGYPT.

IN ORDER TO STOP THIS, THE GOVERNMENT DECIDED TO TAKE OVER THE WHOLE AREA IN WHICH THE GOURNAS HAD BUILT THEIR HOMES.

BUT CAN ONE SO EASILY MOVE PEOPLE FROM ONE PLACE TO ANOTHER, ESPECIALLY WHEN THEIR LIVELIHOOD DEPENDS ON THE LAND WHICH EVEN THEIR OWN HOUSES GROW?

THE MAIN REASON OF THE VILLAGE OF NEW GOURNA WAS BUILT HERE, WAS TO FOLLOW THE OPINION FROM THE VILLAGE ELDERS THAT THE AREA WAS ENOUGH FOR, AS THE VILLAGE WAS BEING BUILT IN A BETTER LOCATION, MANY OF THE NEW BUILDINGS WERE CHANGING AND BETTER.

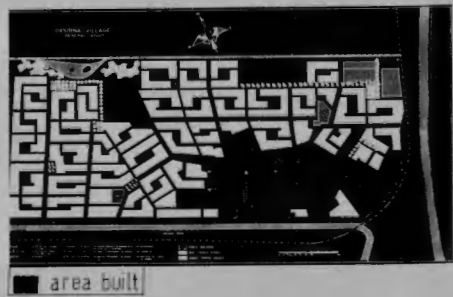
ESPECIALLY THE OWNERSHIP OF ANTIQUITIES LOST THEIR ENTHUSIASM FOR THE MOVE AND WANTED TO SUPPORT ANY FORMER WORK IN THE TOMBS. INDEPENDENT BUILDING STREETS AND HOUSES WERE LEFT INDIVIDUAL. THE PEOPLE WANTED THESE AND, WHILE THE OLD GOURNA - HAVING BEEN BUILT IN A BETTER CLIMATIC CONDITION AND THE FACT THAT NEW GOURNA IS NEARER TO LUXOR, WHERE THEY GO TO WORK - THESE PEOPLE HAVE MOVED ONLY

IN THE PAST 5 - 10 YEARS AND ANY ADDITIONS OR ADDITIONS TO THE VILLAGE HAVE BEEN MADE BY THEM DURING THIS PERIOD.

HASSAN FATHY HAD TRIED TO RELATE THE DESIGN OF THE VILLAGE AS CLOSELY AS POSSIBLE TO THE TRADITIONAL DESIGNS AND WAYS OF LIFE OF THE PEOPLE. HE INTRODUCED A VAULT AND DOME METHOD OF CONSTRUCTION IN RED BRICK, WHICH THOUGH NOT AS CHEAP AS THE FLAT AND STRAW ROOFS OF THE LOCAL VILLAGES, WAS SAFER, CLIMATICALLY MORE COMFORTABLE AND DEFINITELY CHEAPER AND EASIER TO BUILD THAN THE CONCRETE ROOFS ARCHITECTS FAVOURED.

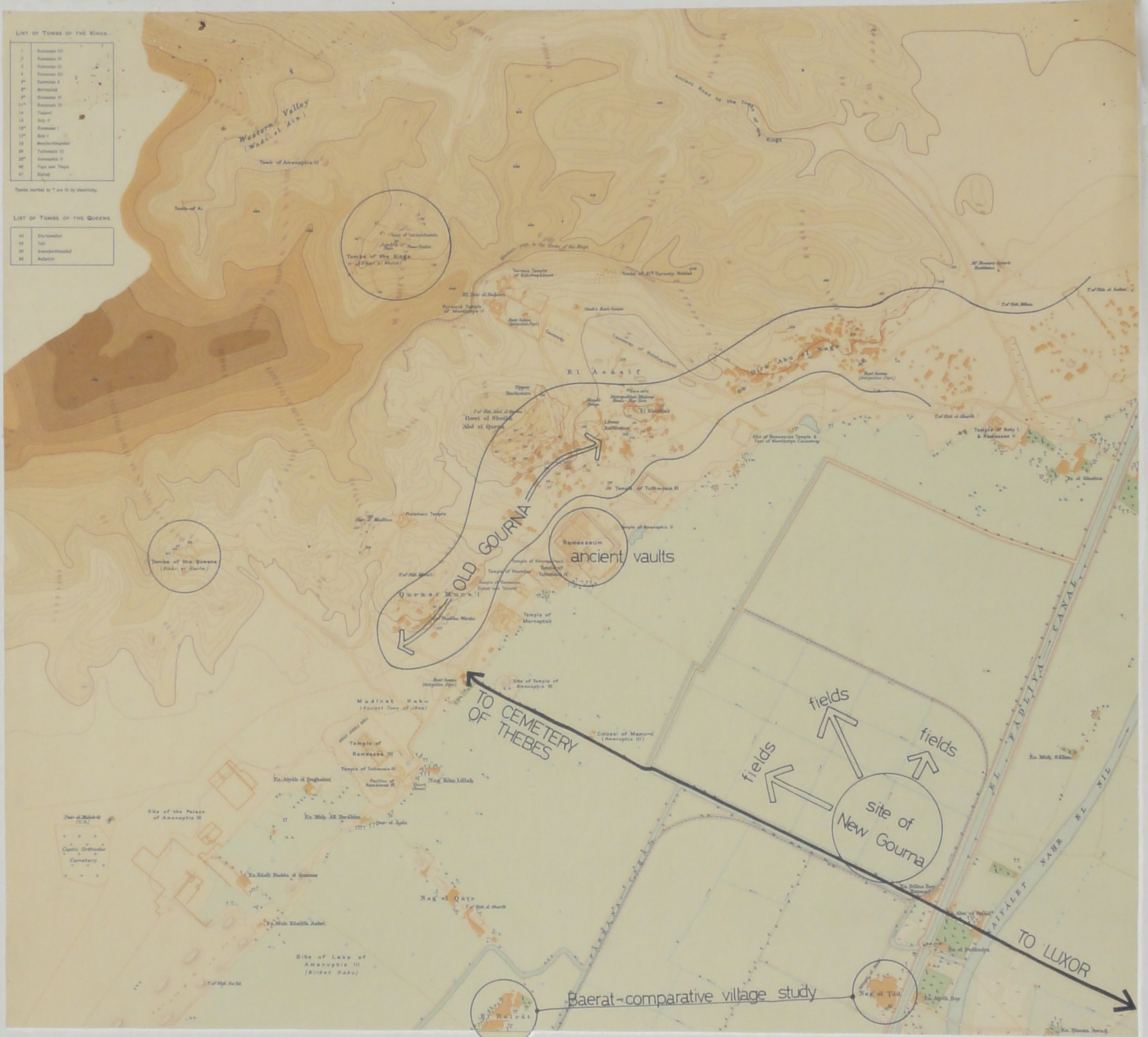
IN MANY AREAS IN UPPER EGYPT, BECAUSE OF THE ASWAN DAM SCHEME - NEW VILLAGES HAVE BEEN BUILT BY THE GOVERNMENT. THESE ARE PROVING LARGELY UNSATISFACTORY WITH THEIR GRID-IRON LAYOUTS AND CONCRETE TECHNOLOGY, UNSUITABLE TO THE CLIMATE, UNRELATED TO THE LIVING PATTERNS OF THE PEOPLE AND TOO EXPENSIVE TO IMPLEMENTATION NATIONALLY.

WE STUDIED NEW GOURNA, OLD GOURNA AND TRADITIONAL VILLAGES IN THE VICINITY IN ORDER TO ESTABLISH COMPARATIVE SUCCESS AND FAILURES OF THE DESIGN CONCEPTS OF THE PROJECT AND ESTABLISH GUIDE-LINES FOR SIMILAR PROJECTS IN THE FUTURE.



# NEW GOURNA

## LOCALITY MAP



APPROXIMATELY 28 YEARS AGO, THE VILLAGE OF NEW GOURNA WAS DESIGNED BY PROFESSOR HASSAN FATHY, TO ACCOMMODATE 900 FAMILIES WHICH WERE TO BE MOVED FROM OLD GOURNA, SITUATED ON THE HILLS OF THE CEMETERY OF THEBES.

THE REASON FOR THIS MOVE, INITIATED BY THE DEPARTMENT OF ANTIQUITIES OF THE EGYPTIAN GOVERNMENT, WAS THAT THE GOURNIS, WHO WERE AND STILL ARE TOMB ROBBERS AND FORGERS BY PROFESSION, WERE REMOVING PRICELESS TREASURES FROM THE TOMBS AND SELLING THEM TO DEALERS I.E. THE CITY WHO WOULD IN TURN SELL THEM TO FOREIGNERS. IN THIS WAY MANY TREASURES WOULD FIND THEIR WAY OVERSEAS INSTEAD OF IN THE MUSEUMS OF EGYPT.

IN ORDER TO STOP THIS, THE GOVERNMENT DECIDED TO TAKE OVER THE WHOLE AREA IN WHICH THE GOURNIS HAD BUILT THEIR HOMES.

BUT CAN ONE SO EASILY MOVE PEOPLE FROM ONE PLACE TO ANOTHER, ESPECIALLY WHEN THEIR LIVELIHOOD DEPENDS ON THE TOMBS OUT OF WHICH EVEN THEIR OWN HOUSES GROW?

ONE QUARTER OF THE VILLAGE OF NEW GOURNA WAS BUILT WHEN, DUE TO MUCH OPPOSITION FROM THE VILLAGE ELDERS THE AREA WAS FLOODED AND, AS THE VILLAGE WAS BEING BUILT ON AGRICULTURAL LAND, MANY OF THE NEW BUILDINGS WERE CRACKED AND RUINED.

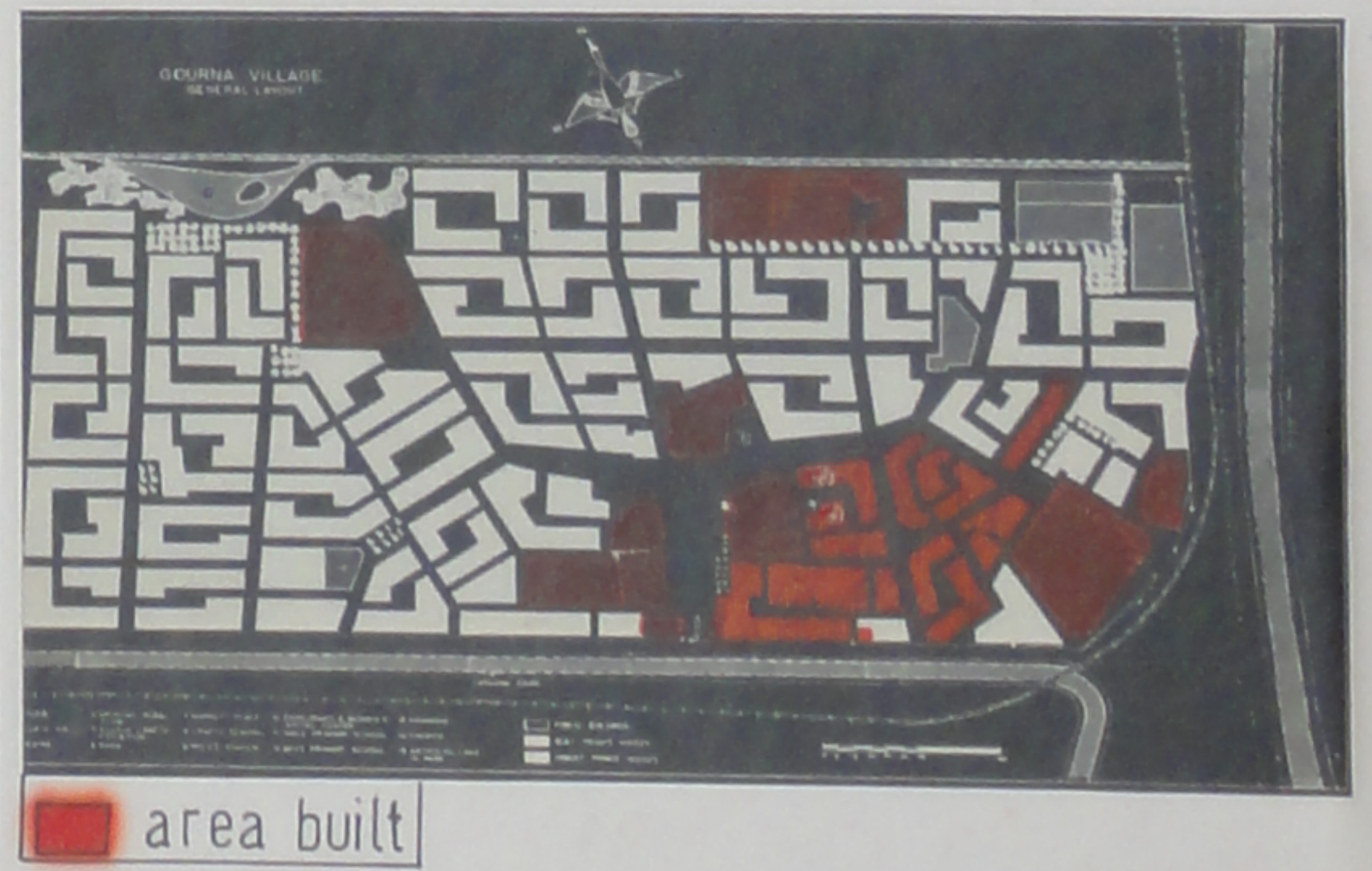
EVENTUALLY THE DEPARTMENT OF ANTIQUITIES LOST THEIR ENTHUSIASM FOR THE SCHEME AND REFUSED TO SUPPORT ANY FURTHER WORK ON THE PROJECT. CONSEQUENTLY BUILDING STOPPED AND NEW GOURNA WAS LEFT UNFINISHED. THE PEOPLE LIVING THERE NOW, MAINLY FROM OLD GOURNA - HAVING MOVED BECAUSE OF BETTER CLIMATIC CONDITIONS AND THE FACT THAT NEW GOURNA IS CLOSER TO LUXOR, WHERE THEY NOW WORK THESE PEOPLE HAVE MOVED ONLY

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# NEW GOURNA

AS SURVEYED APRIL 1973



# MUD BRICK HOUSE



FOR CONTINUATION, SEE LUSAN & KARPAR SHEET





# NEW GOURNA

AS DESIGNED

1945



# NEW GOURNA

AS DESIGNED

1945

