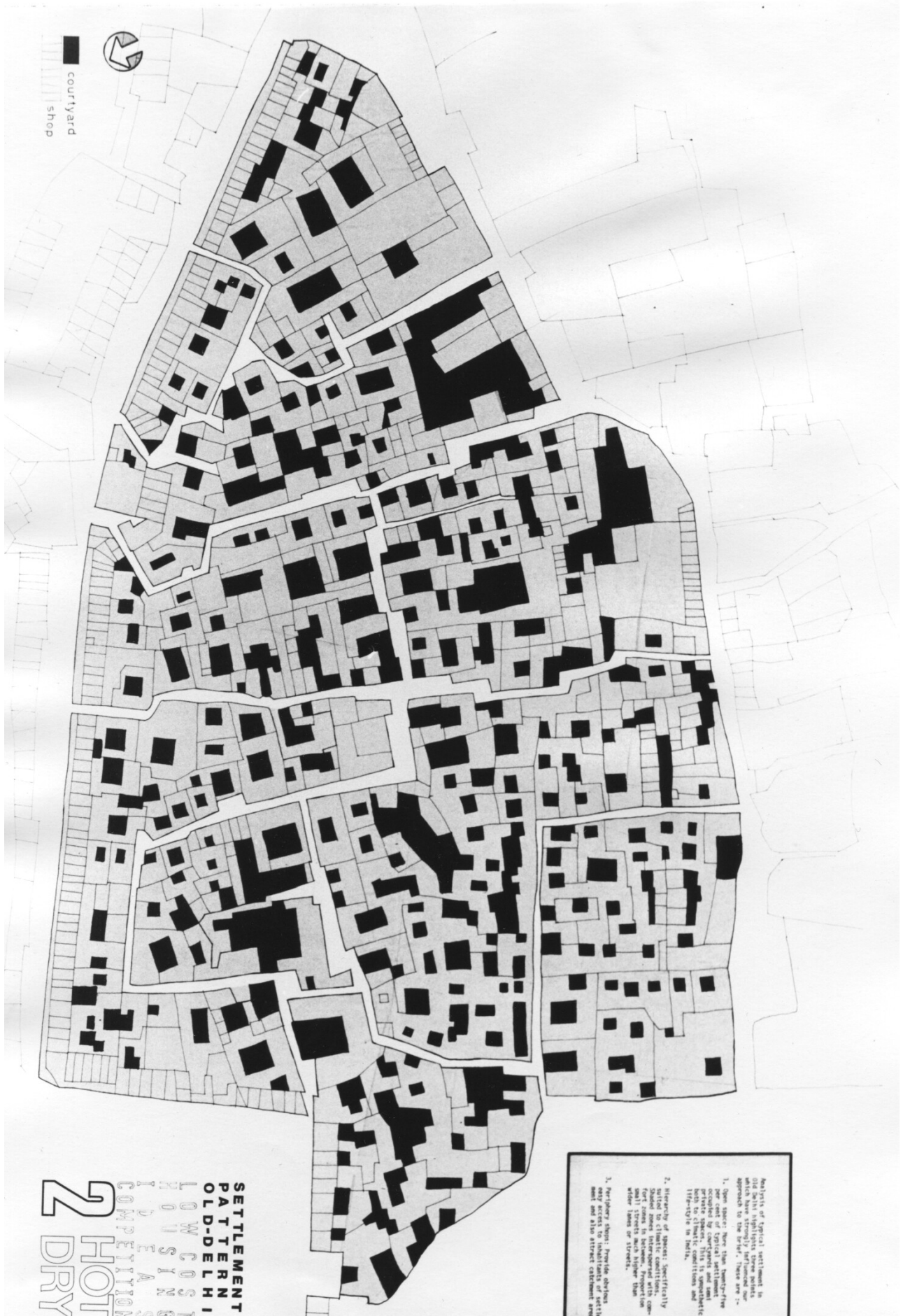
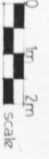
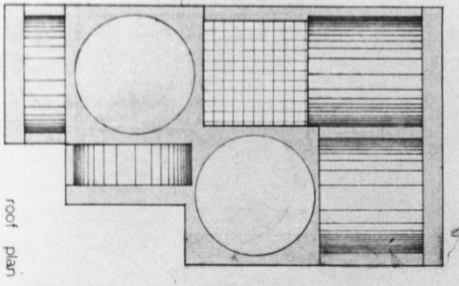
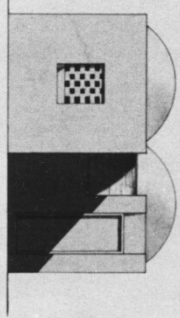
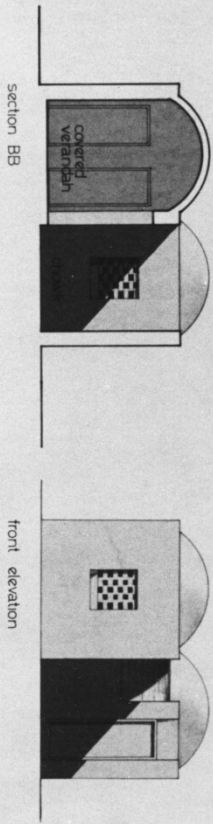
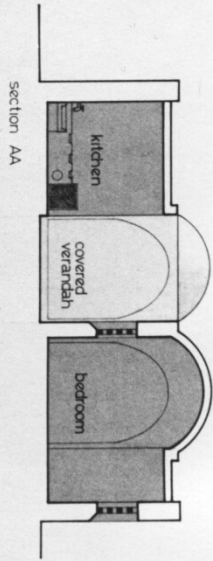
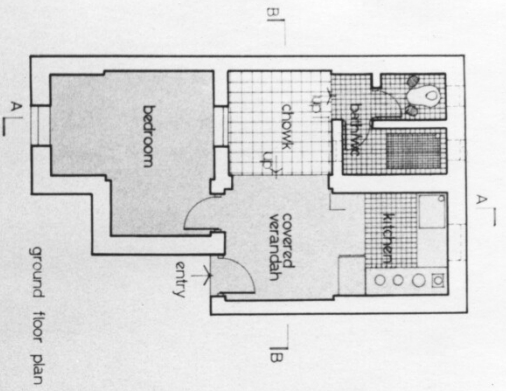



  
 courtyard
   
 shop



SETTLEMENT  
 PATTERN  
 OLD-DELHI  
 LOW COST  
 HOUSING  
 COMPETITION  
 2 HOT  
 DRY

Analysis of typical settlement in  
 the city of Delhi, India, shows a  
 pattern of building footprints and  
 courtyards which have strongly influenced the  
 approach to the brief. There are 7-  
 1. Open space: More than twenty-five  
 per cent of typical settlement  
 is open space. This is not  
 private space. This is open space  
 which is available to all. This is  
 the result of climatic conditions and  
 the way of life.  
 2. Hierarchy of space: (Spatially)  
 defined zones interpreted with con-  
 sideration to climatic conditions.  
 From the most open to the most  
 sheltered (streets much higher than  
 other lanes or streets).  
 3. Particular space: Particular objects  
 which are not only access to the settlement  
 but also attract settlement and



unit A - built area 29sq. m.

COST BREAKDOWN OF MATERIALS & LABOUR		Rs. (Rupees)
A	FOUNDATIONS & FLOORING	Rs. 1360
B	WALLS - RED BRICK	Rs. 1785
C	ROOFING VAULTS & DOMES	Rs. 888
D	FINISHES & FIXTURES	Rs. 2235
E	5% CONTINGENCY	
TOTAL COST		Rs. 7211

Detailed cost breakdown in separate report

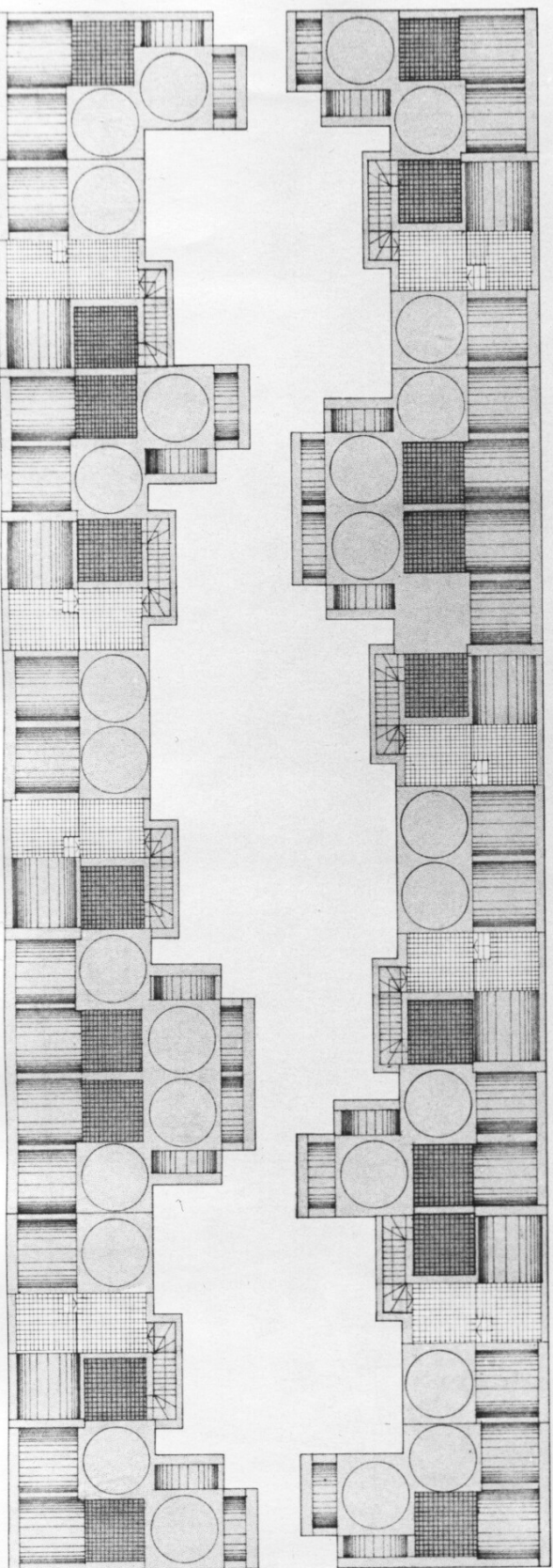
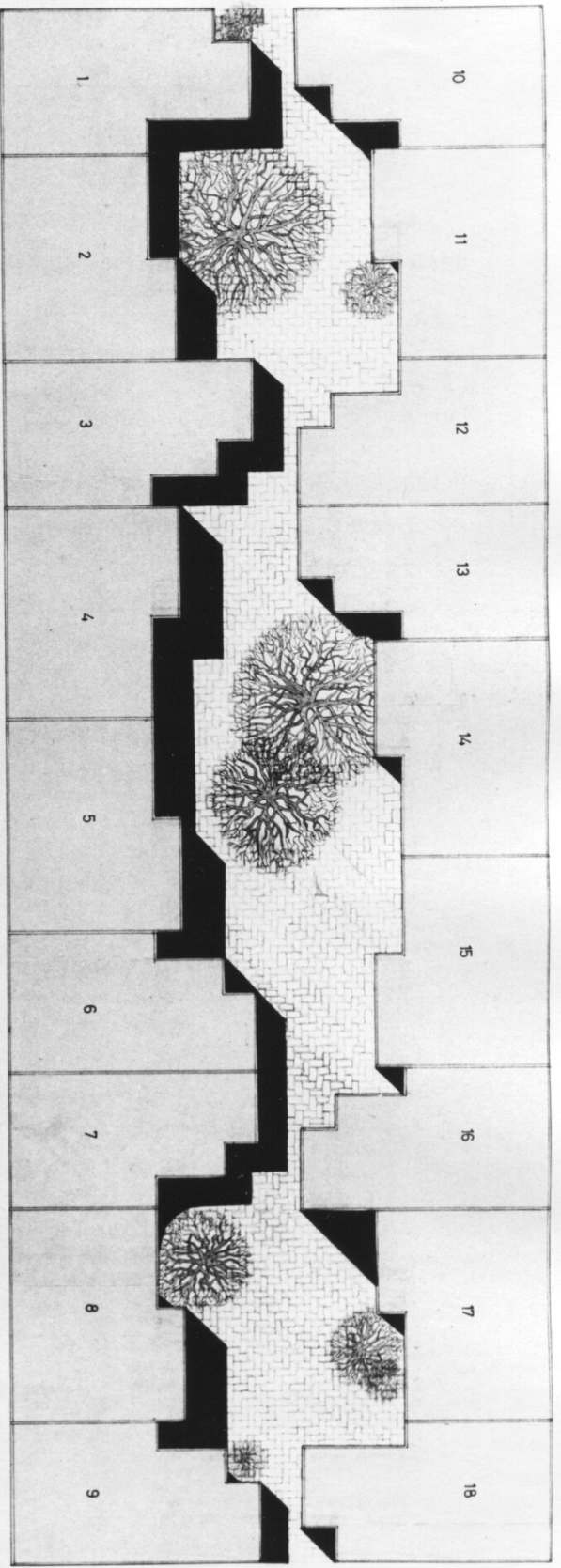
1. Climate conditions and traditional life-style in India strongly recommend the use of vaulted domes. Both types A and B have courtyards. Type A for sitting out is without any furniture. Type B for children to play is with security of some sunny sheltered areas of courtyard.

2. Courtyard integrated with multi-room space to create both visual and physical extension of living area. This is achieved by providing steps to sit with friends, family and social use of transition from complete enclosed space to semi-covered to fully open courtyard. Facilities of sitting area are provided free with living areas.

3. Services from latrine and kitchen are provided in units A and B and throughout cluster.

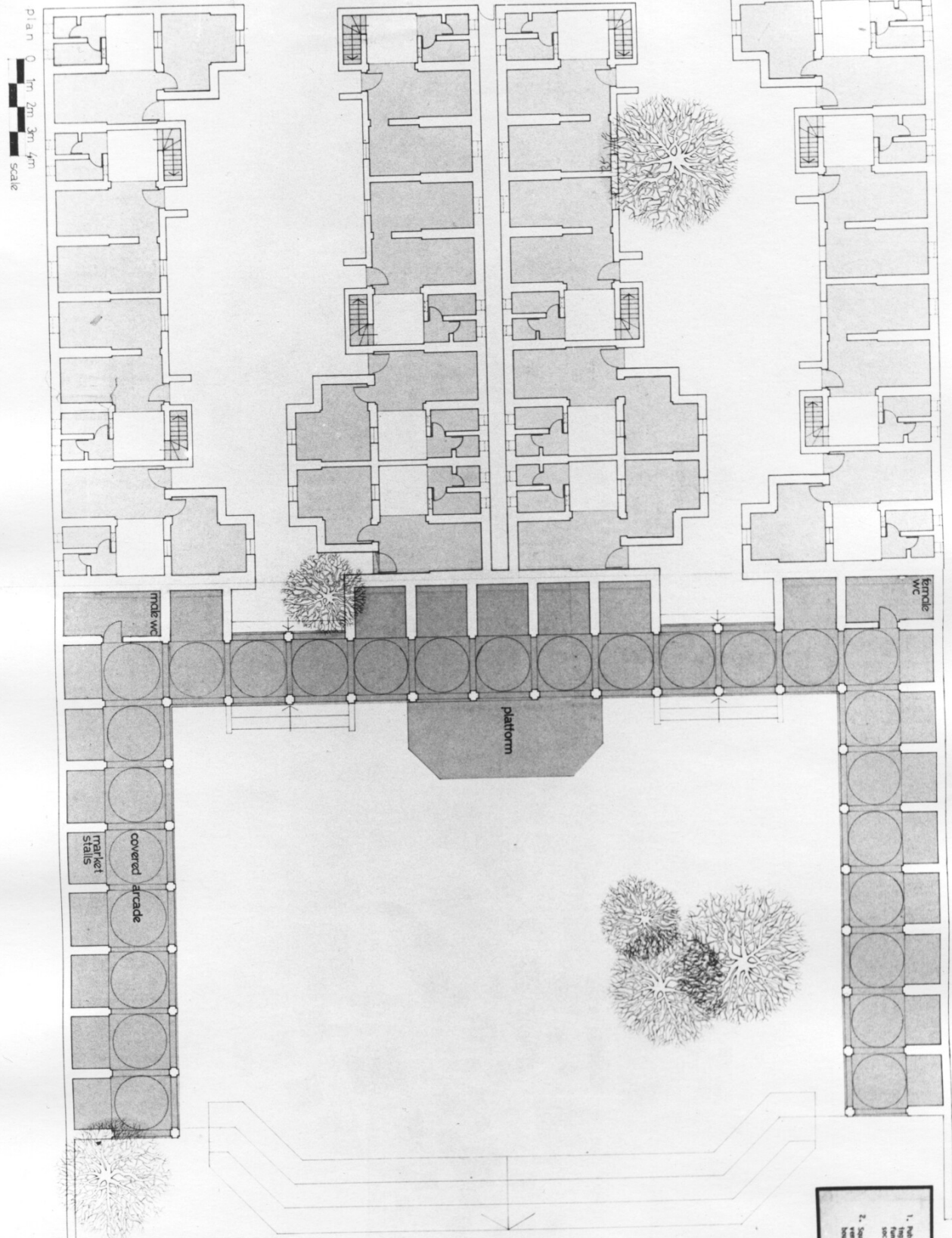
ONE ROOM UNIT  
LOW COST  
HOUSING  
IN DRY  
AREAS  
COMPETITION  
4 HOT  
DRY





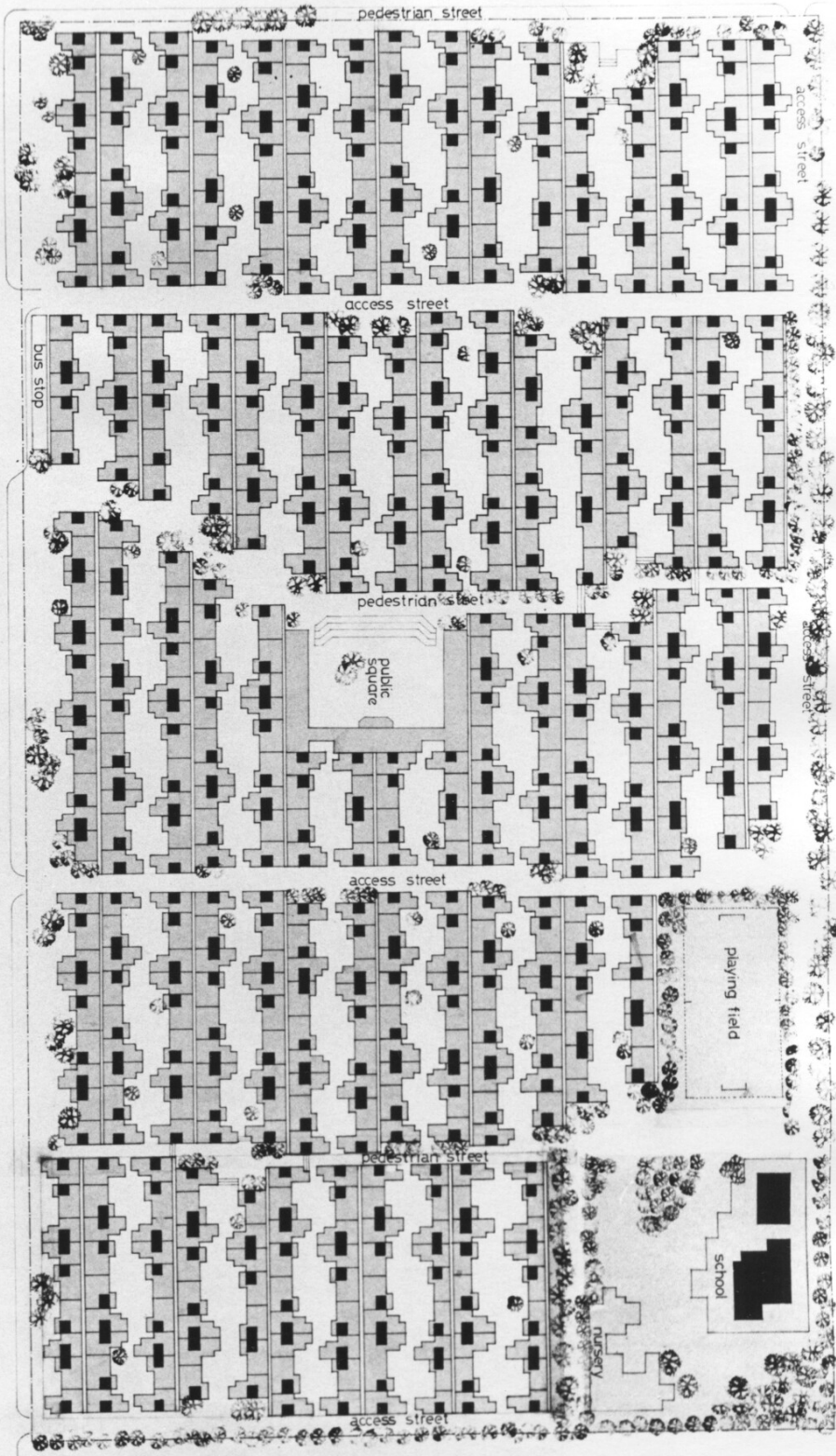
0 1m 2m 3m 4m  
scale

CLUSTER:  
COMMUNAL SPACE  
AND ROOF PLAN  
LOW COST  
HOUSING  
I  
COMPETITION  
7  
HOT  
DRY



1. Public square integrated with housing  
 functions as market place/cafeteria,  
 social and religious community etc.  
 2. Square located centrally for  
 convenience of all inhabitants in neigh-  
 borhood.

**PUBLIC SQUARE**  
 LOW COST  
 HOUSING  
 IN DENSE  
 COMPETITION  
 HOT  
 DRY  
 8



1. Scheme orientated with access and pedestrian streets on north-south axis - avoids from direct solar glare except at midday. Courtyard passages in east/west axis, because of irregular patterns, shaded throughout the day.

2. Courtyard passages between clusters allow for cool air from shaded areas to flow to sunlit areas, thereby creating stable heat temperatures in most places.

3. Restricted entrances, to ensure separation of communal spaces from public spaces.

4. Public square part of pedestrian space - therefore situated off pedestrian street rather than access street. Public square may be multi-functional, used as market place, functions, etc.

5. Access street wide enough for service vehicles (ambulances, fire engines, refuse collection) and separated from pedestrian streets.

6. School and library situated in south-west corner of site. Position more suitable for school than housing in order to decrease density in south-west corner bounded by 4 storey residential buildings.

7. Houses on North and South side mainly orientated towards the street - favourable to settling up shops, bus stand in North-east end adjacent to houses facing street.

8. Landscaping encouraged to protect against solar radiation, especially on east axis.

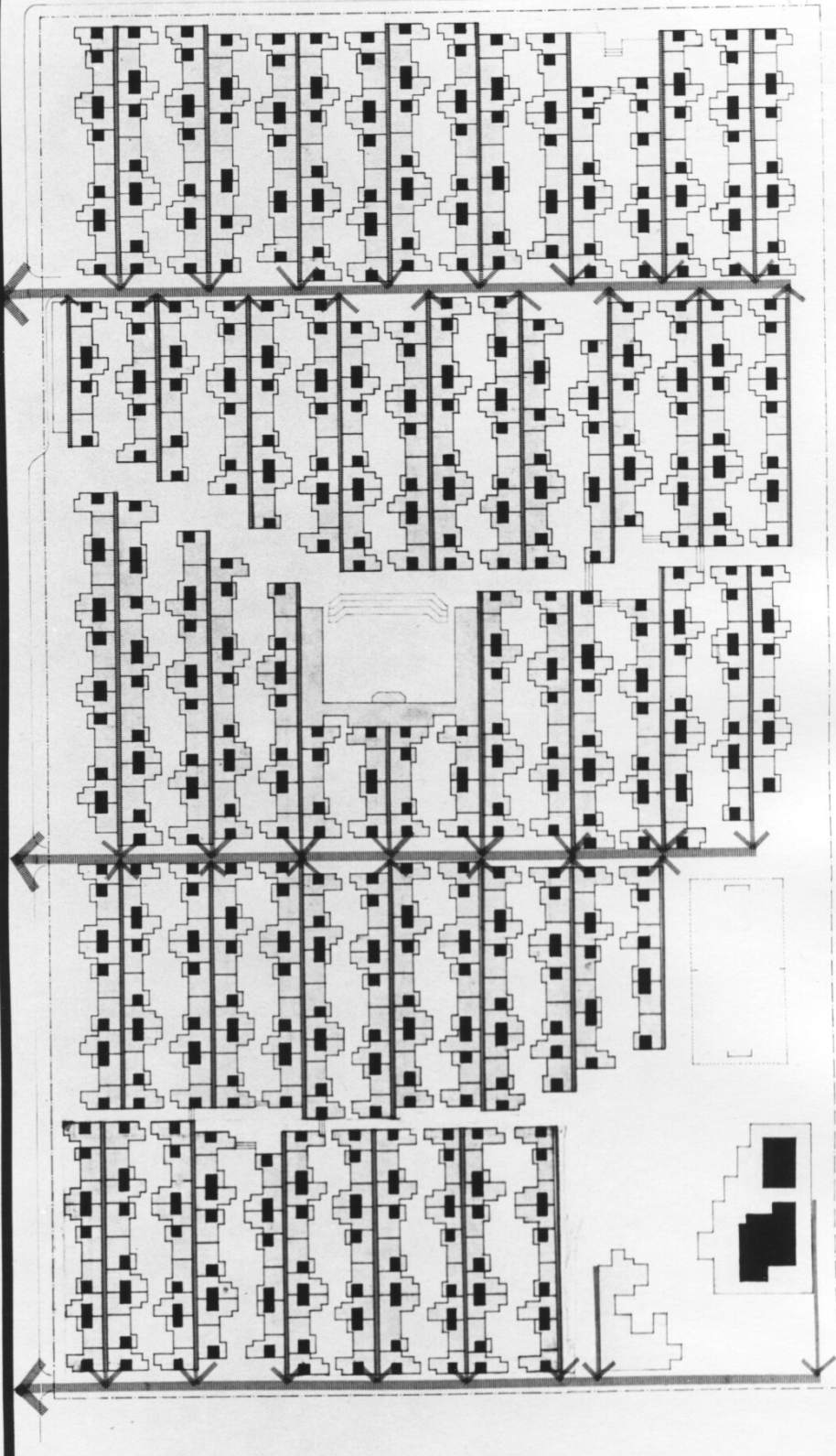
9. Site layout very favourable to economy of services layout. (See separate drawing).



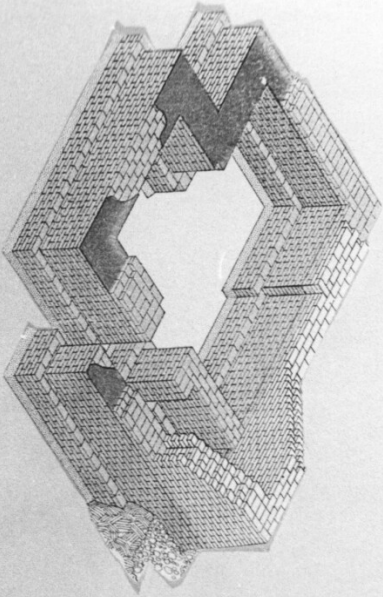
**SITE PLAN**  
**LOW COST**  
**HOUSING**  
**IN COMPETITION**  
**9 HOT DRY**

0.5m 5m  
 Scale  
 ■ public main drain  
 ■ site main drain  
 — secondary drain

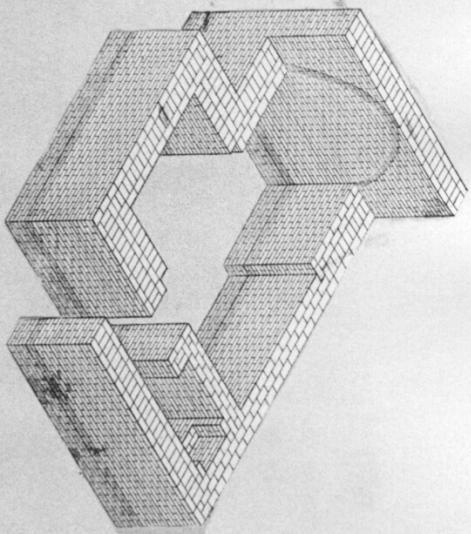
1. Service layout for each house shown in plan. Service lines for water supply and drainage located in rear wall of all units. Service lines in rear of cluster.  
 2. Passageway (80 cm.) at rear of cluster or accessible for repairs and removal of refuse. Passageway left unobstructed for economy and easy maintenance.



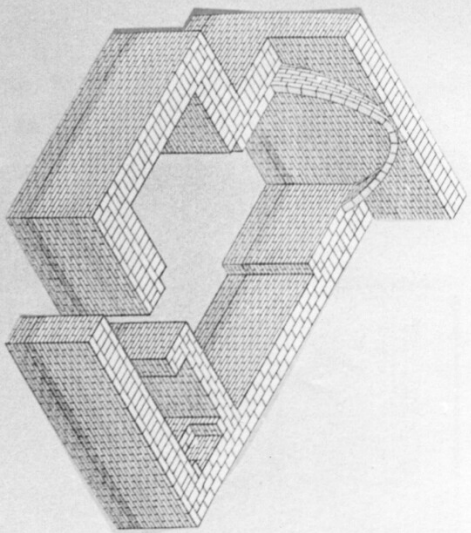
SERVICES  
 LAY OUT  
 LOW COST  
 HOUSING  
 COMPETITION  
 IDH  
 DRY



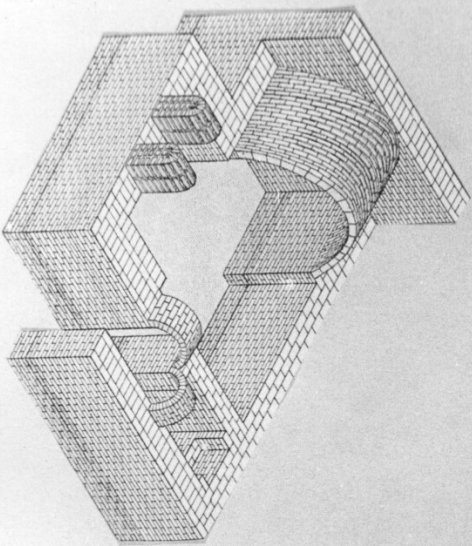
1 FOUNDATIONS WITH DAMP PROOFING COURSE ABOVE GROUND LEVEL



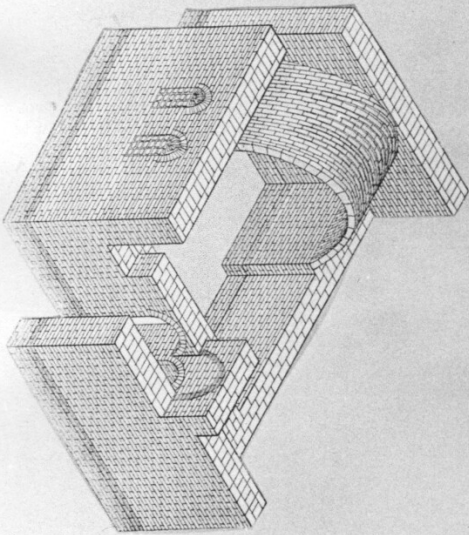
2 WALLS BUILT UP TO THE LEVEL OF THE SPRING POINTS OF THE VAULTS. END WALL BUILT FOR VAULT TO LEAN AGAINST. INVERTED CATENARY FORM TRACED ON TO END WALL.



3 VAULT BUILDING BEGINS WITH COURSES INCLINED TOWARD END WALL SO THAT NO FORM WORK OR SHUTTERING IS NEEDED



4 VAULT COMPLETED WINDOW OPENINGS BUILT UP WITH DRY BRICK. NO MORTAR



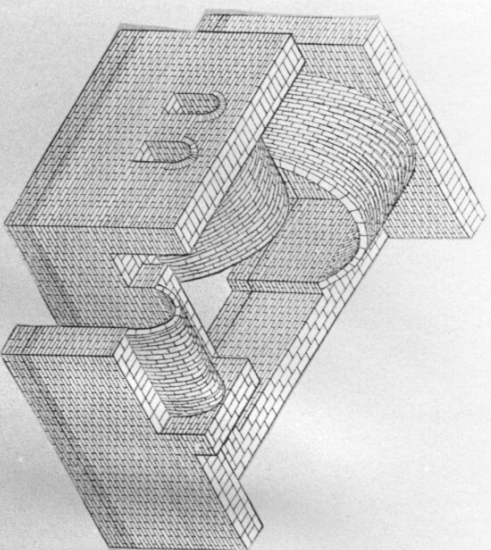
5 WALLS BUILT UP ARCHES BUILT OVER DRY BRICK IN WINDOWS

THESE DRAWINGS COULD FORM THE BASIS OF A TRAINING PROGRAM FOR LOCAL PEOPLE. THE INTRODUCTION OF THIS BUILDING METHOD INSURES THE BETTER USE OF INDIGENOUS MATERIALS (MUD BRICK OR RED BRICK), THE RELIANCE ON LOCAL MATERIAL AND LABOUR INTENSIVE. CONSTRUCTION TECHNIQUES INSURE THAT HOUSING DEVELOPMENT FUNDS REMAIN IN THE COMMUNITY WHERE THEY ARE MOST NEEDED.

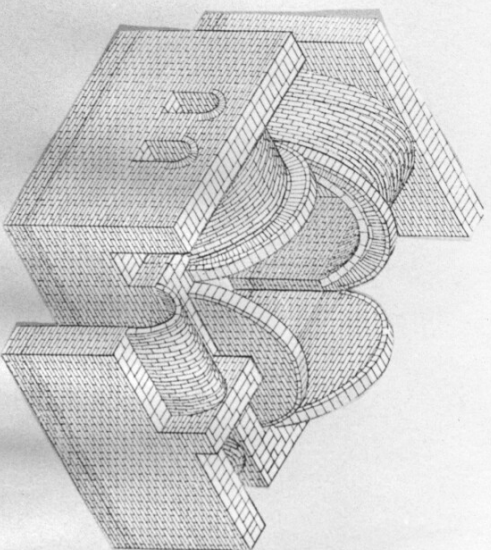
THESE DRAWINGS COULD FORM THE BASIS OF A TRAINING PROGRAM FOR LOCAL PEOPLE. THE INTRODUCTION OF THIS BUILDING METHOD INSURES THE BETTER USE OF INDIGENOUS MATERIALS (MUD BRICK OR RED BRICK), THE RELIANCE ON LOCAL MATERIAL AND LABOUR INTENSIVE. CONSTRUCTION TECHNIQUES INSURE THAT HOUSING DEVELOPMENT FUNDS REMAIN IN THE COMMUNITY WHERE THEY ARE MOST NEEDED.

ALLAN GAIN DEVELOPMENT WORKSHOP  
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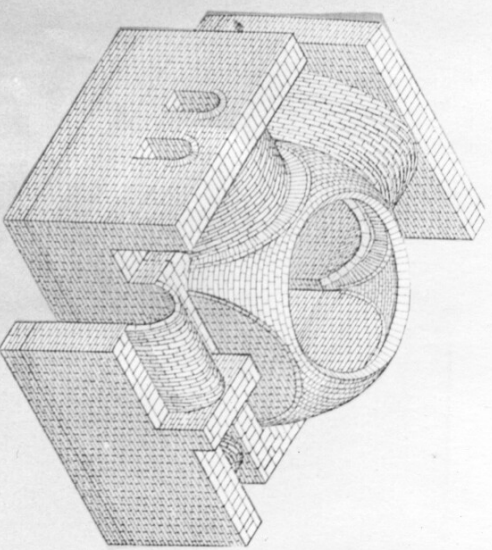
CONSTRUCTIONAL  
DETAILS  
LOW COST  
HOUSING  
IN DEVELOPING  
COUNTRIES  
HOT  
DRY



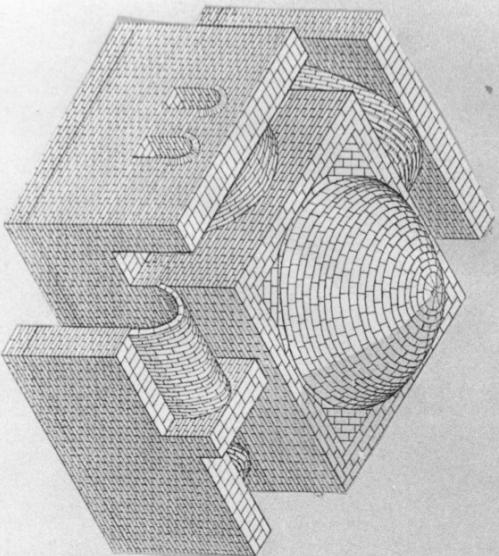
6 SMALL VAULT CONSTRUCTED IN THE SAME WAY AS THE LARGE ONES. LOOSE BRICKS REMOVED FROM WINDOW OPENING.



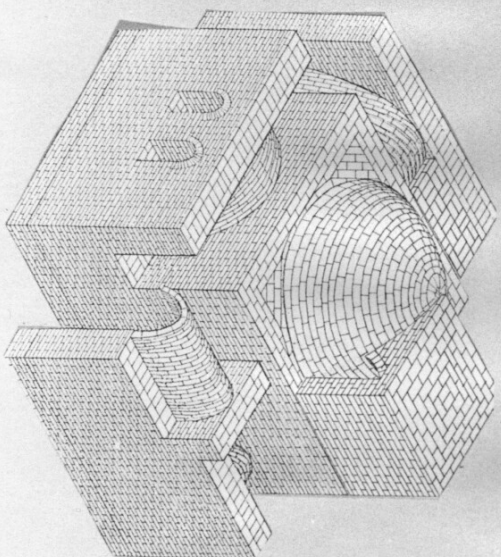
7 CIRCULAR ARCHES BUILT OVER VAULTS TO FORM A BASE FOR THE PENDENTIVES OF THE DOME.



8 PENDENTIVES COMPLETED FORMING A CONTINUOUS COURSE FROM WHICH THE DOME CAN BE COMPLETED



9 BRICK COURSES CONTINUALLY MORE INCLINED UNTIL DOME IS FINISHED



10 VAULT AND DOME ROOFS CAN BE EASILY LEVELLED TO PROVIDE A FLAT SURFACE FOR FUTURE BUILDING

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CONSTRUCTIONAL  
DETAILS  
LOW COST  
HOUSING  
IDEAS  
COMPETITION  
HOT  
2 DRY