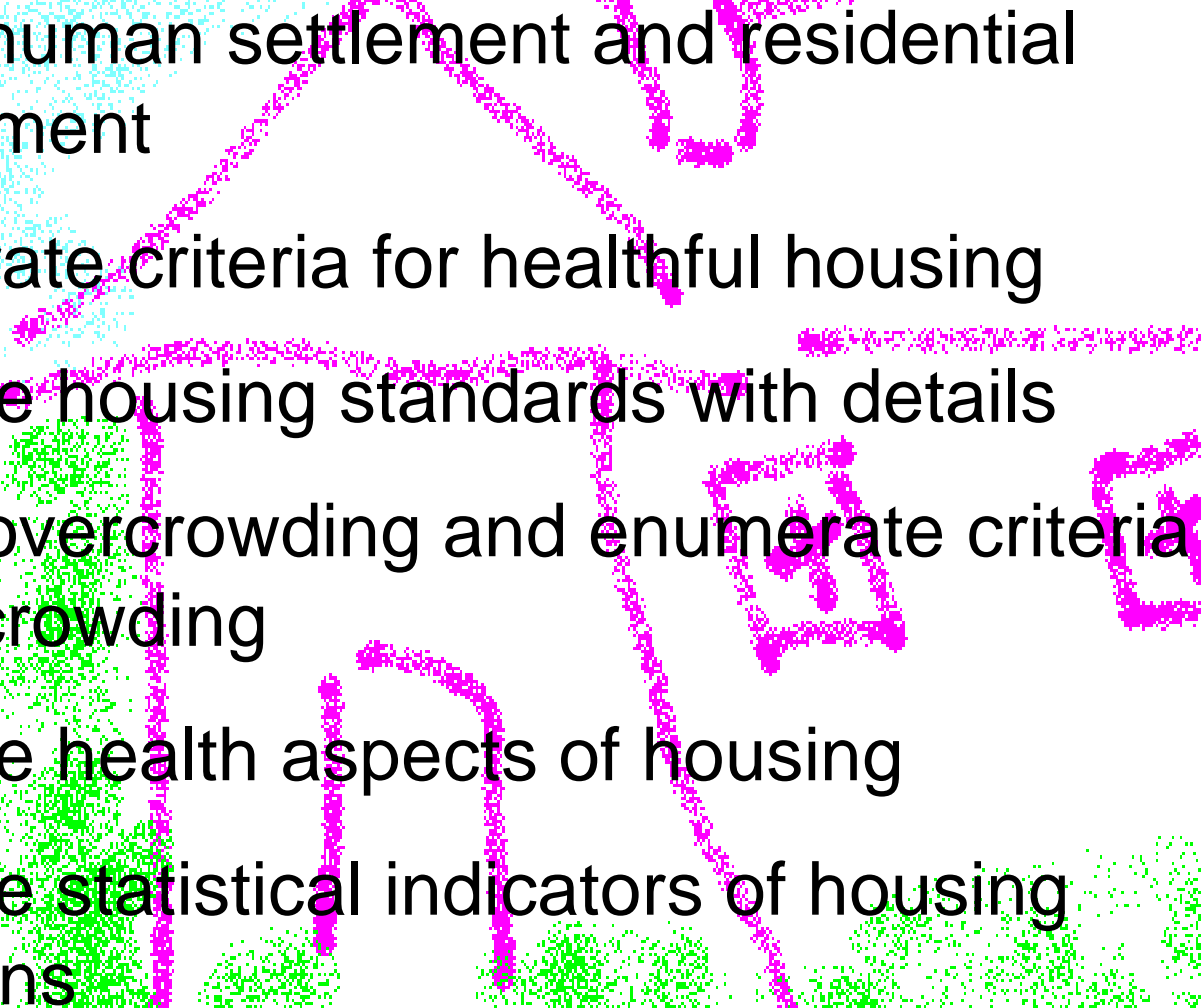


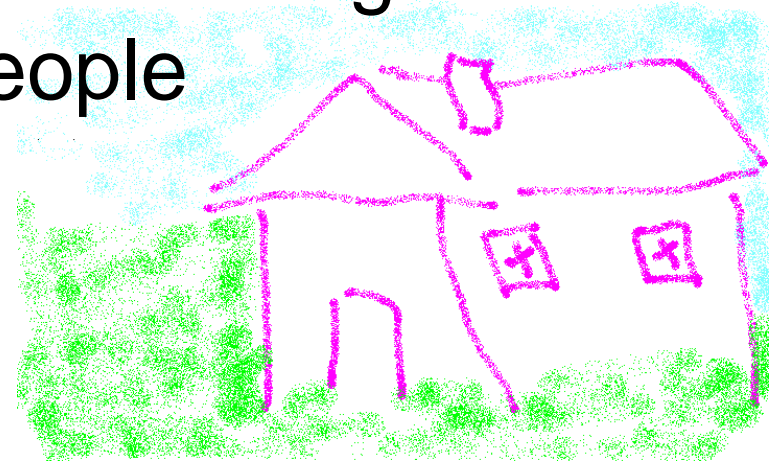
Housing and Health



✓ ***Learning objectives:***

1. Define human settlement and residential environment
 2. Enumerate criteria for healthful housing
 3. Describe housing standards with details
 4. Define overcrowding and enumerate criteria of overcrowding
 5. Describe health aspects of housing
 6. Describe statistical indicators of housing conditions
- 

- ✓ Not only the physical structure
- ✓ Immediate surroundings, related community services and facilities
- ✓ Human settlement: all places in which a group of people reside and pursue their life goals; the size of the settlement may vary from a single family to millions of people

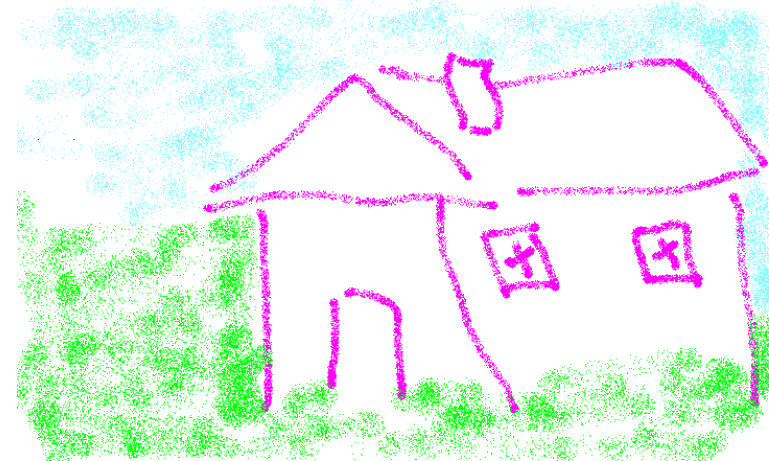


Ekistics:

(Doxiadis C. A., New York, 1977)

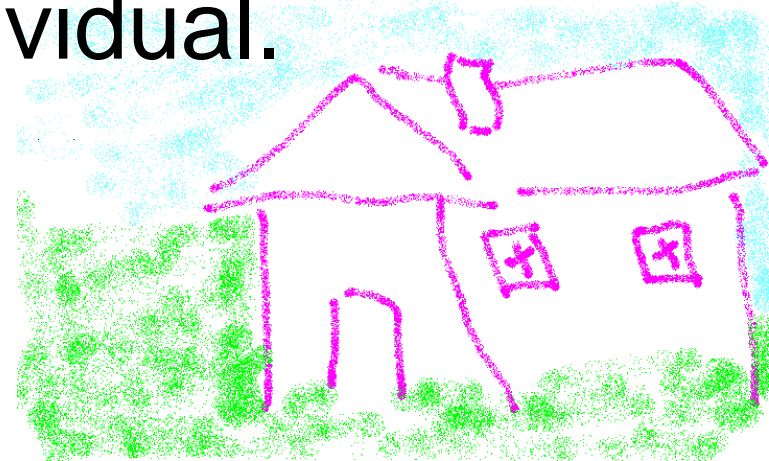
It is the science of human settlements.

It encompasses the many interactive factors that make living space compatible with good physical, mental, emotional and social health and well being.



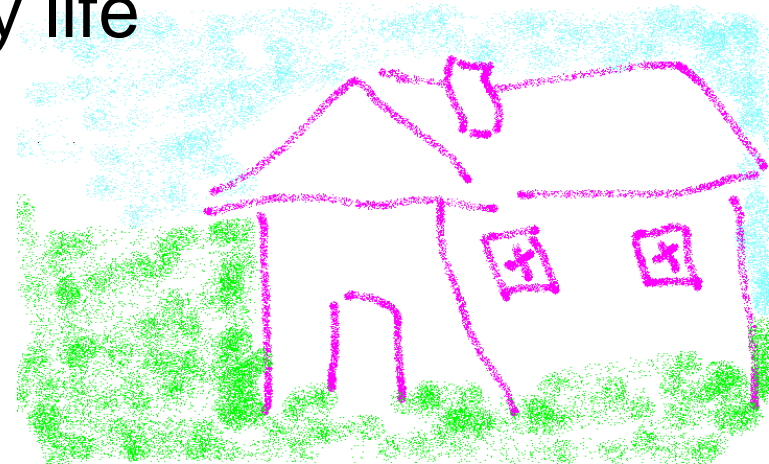
Residential environment:

The physical structure that man uses and the environs of the structure including all necessary services, facilities, equipment and devices needed or desired for the physical and mental health and the social well-being of the family and the individual.



• ***Social goals of housing:***

- Shelter: a sanitary shelter, a basic need
- Family life: adequate space for family activities (affects productivity and stability)
- Access to community facilities
- Participation in community life
- Economic stability

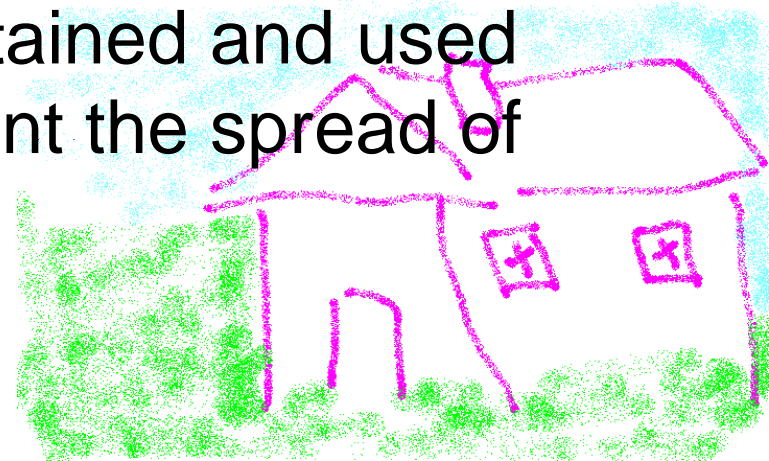


Criteria for healthful housing:

By an expert committee of WHO

Similar to the basic principles of healthful housing by APHA:

- Provides physical protection and shelter;
- Provides adequately for cooking, eating, washing and excretory functions;
- Designed, constructed, maintained and used in a manner such as to prevent the spread of communicable diseases;



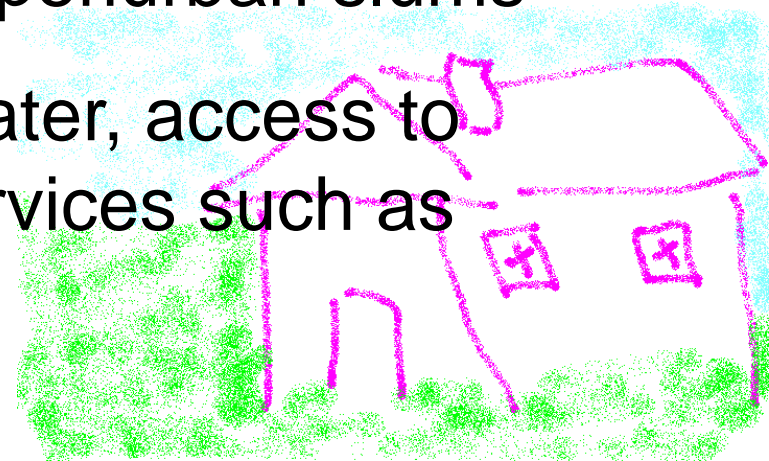
Criteria (contd.)

- Provides for protection from hazards of exposure to noise and other pollution;
- is free from unsafe arrangements due to construction;
- is free from toxic or harmful materials



Overview of housing conditions in the world:

- Greatly improved in the affluent industrial nations
- Urban population will compose as much as 65% by 2025 (UN world population and urbanization trends, <http://www.un.org/popin/wdtrends.htm>)
- Many cities are already large
- Urban dwellers in developing countries: terrible living conditions, crowded into periurban slums
- Often lack sanitation, clean water, access to health care and other basic services such as elementary education

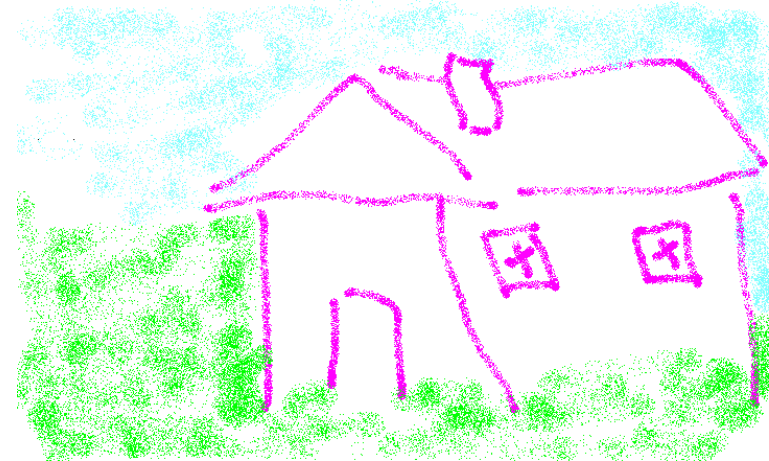


- The proportion of people in such circumstances ranges from 20% to more than 80% in many cities throughout Africa, Latin America, SE – SW Asia
- IMR > 100 in many parts
- Abandoned children → crime, antisocial activities
- Shantytowns, periurban slums: ideal breeding places for diseases and social unrest
- Worldwide, an estimated 100 million people are entirely homeless, living on the streets without possessions, often from infancy onward



(due to growing rate of urbanization and population density in urban areas....)

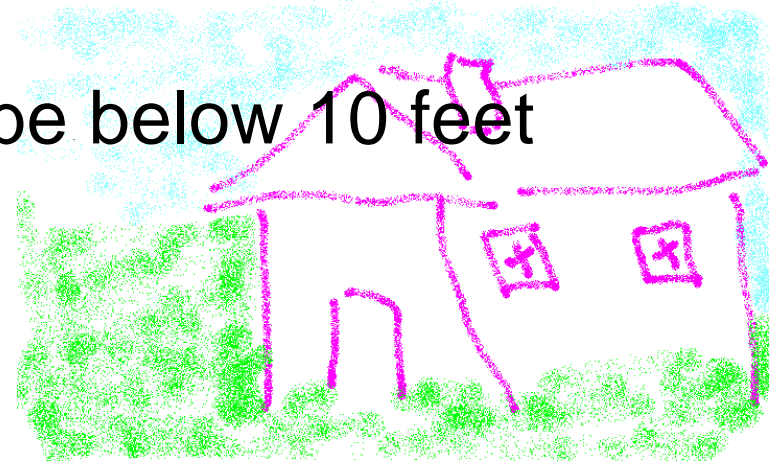
- Proliferation of high-rise, high-density apartments
- New set of health problems: emotional tension (too close neighbourhood), inadequate play area for children, poor services, defective elevators, etc



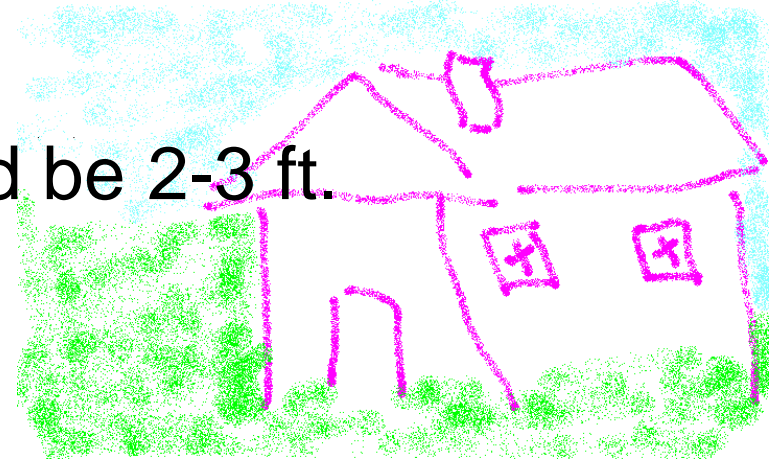
- **Housing standards:**
- **Aim:** improvement of housing and environmental conditions for the majority of families within the limits set by available resources and objectives
- Standards in India are those recommended by the EHC (1947), APHA-CDC recommendations on minimum housing standards and a WHO manual on health principles of housing.



1. Site:
 - elevated from its surroundings
 - independent access to the street
 - away from breeding places
 - away from nuisances such as dust, smell, noise, traffic
 - soil should be dry and safe for founding any structure (made-soil)
 - well drained
 - sub soil water should be below 10 feet



2. Set back: - (def) there should be an open space all around the house for proper lighting and ventilation
- built up area: rural – not more than one third
urban – up to two thirds
3. Floor:- impermeable (mud floors not recommended)
- smooth and free from cracks and crevices
 - damp proof
 - height of the plinth should be 2-3 ft.



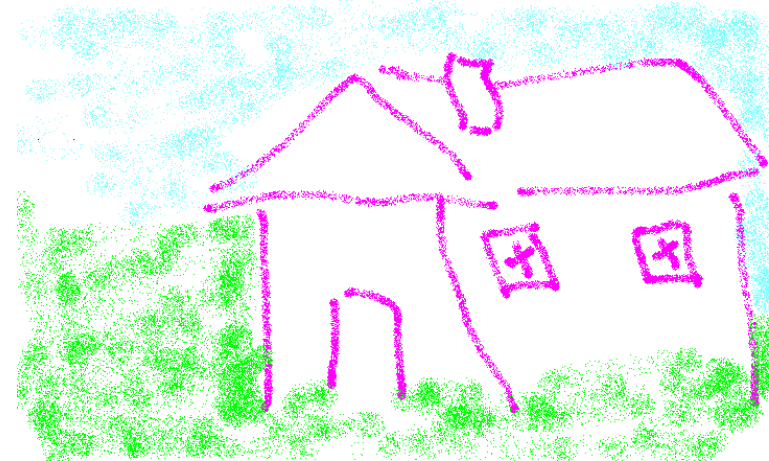
4. Walls: - reasonably strong, not easily damaged
- low heat capacity
 - weather resistant
 - unsuitable for harbourage of rats and vermin
 - smooth

(can be attained by 9 inch brick wall plastered smooth and coloured)



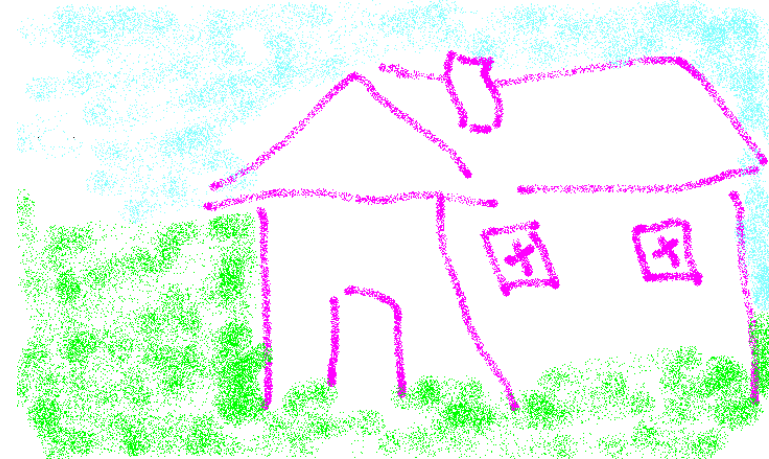
5. Roof: - height not less than 10 ft in absence of air conditioning for comfort
 - should have low heat transmittance coefficient

6. Rooms: should not be less than two, at least one of which can be closed for the security purpose
 - no. and area of rooms according to the size of the family

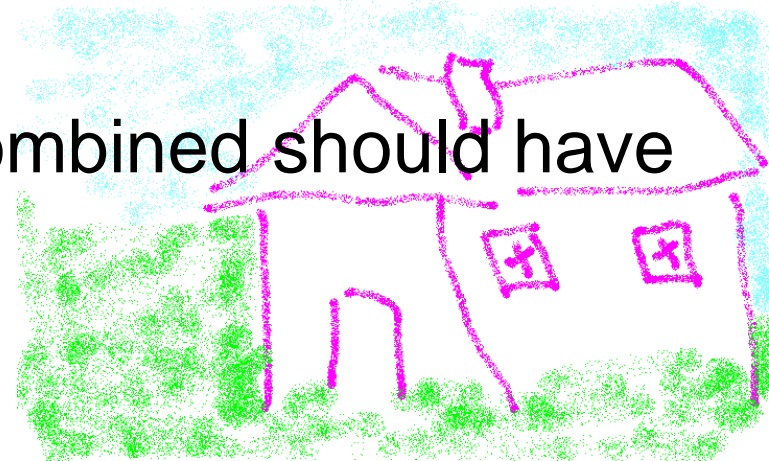


7. Floor area: the floor area available in living rooms per person should not be less than 50 sq. ft., the optimum is 100 sq. ft.

8. Cubic space: unless means are provided for mechanical replacement of air, the height of rooms should be such as to give an air space of at least 500 c. ft. per capita, preferably 1000 c. ft.



9. Windows: - unless mechanical ventilation and artificial lighting are provided, every living room should be provided with at least two windows, and at least one of them should open directly on to an open space
- at a height not more than 3 feet above the ground
 - window area should be $1/5^{\text{th}}$ of the floor area
 - doors and windows combined should have $2/5^{\text{th}}$ the floor area



10. Lighting: the day light factor should exceed 1% over half the floor area

11. Kitchen: - separate

- protected against dust and smoke
- adequately lighted
- provided with arrangements for storing food, fuel and other provisions
- water supply and a sink with drainage
- impervious floor



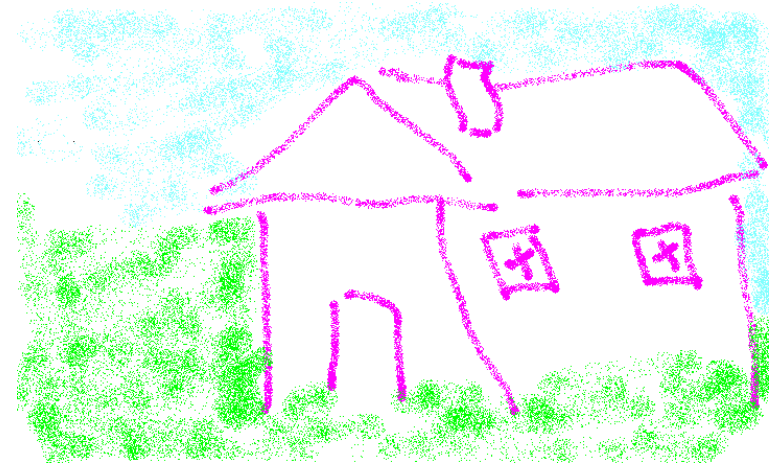
12. Privy

13. Garbage and refuse

14. Bathing and washing

15. Water supply

16. Fire safety

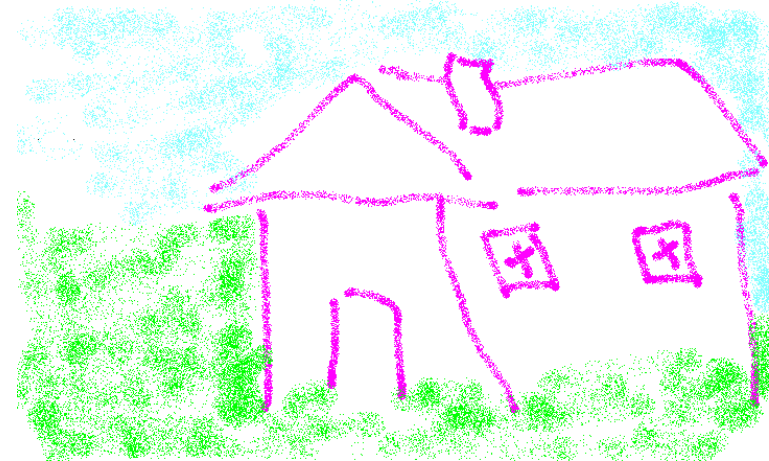


Rural housing:

- “approved” standards may be lower than urban
- Minimum standards are as follows:
 1. At least 2 living rooms
 2. Ample verandah space
 3. Built-up area less than $1/3^{\text{rd}}$ of the total area
 4. Separate kitchen with sink or platform
 5. Sanitary latrine
 6. Window area at least 10% of floor area



7. Sanitary well or tube well within a quarter of a mile from the house
8. Cattle sheds – at least 25 ft away from dwellings
9. Adequate arrangement for the disposal of waste water, refuse and garbage



Overcrowding: (def. as) the situation in which more people are living in a single dwelling than there is space for, so that movement is restricted, privacy secluded, hygiene, rest and sleep difficult.

Risks: - infectious diseases

(high morbidity and mortality)

- psychosocial: lack of sleep, irritability, frustration, anxiety, violence, psychosomatic and mental disorders



Criteria of overcrowding:

1. Persons per room:

1 room	2 persons
2 rooms	3 persons
3 rooms	5 persons
4 rooms	7 persons
5 / more rooms	10 persons (additional 2 for each further room)



2. Floor space:

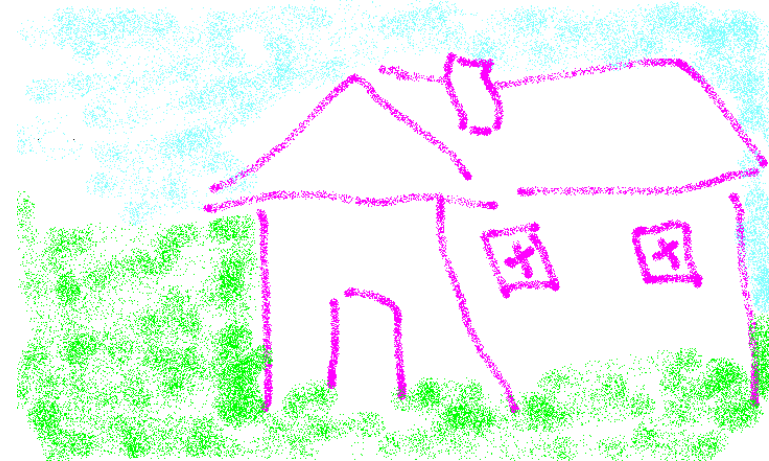
110 sq. ft.	2 persons
90-110 ”	1.5 persons
70-90 ”	1 person
50-70 ”	0.5 person
> 50 ”	nil

(infants are not counted; children between 1 to 10 years are counted as half a unit)



3. Sex separation:

Overcrowding is considered to exist if 2 persons over 9 years of age, not husband and wife, of opposite sexes are obliged to sleep in the same room

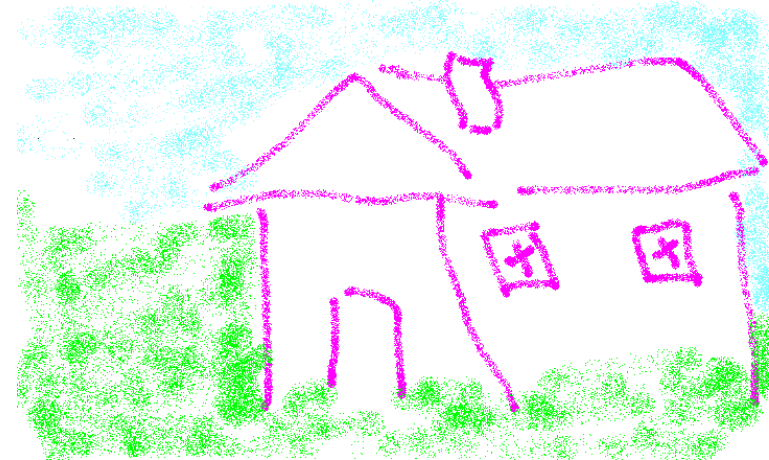


Health aspects:

Difficult to demonstrate the specific cause-and-effect relationship, because housing embraces so many facets of environment.

By deductive reasoning, a strong relationship can be established between poor housing and the following conditions:

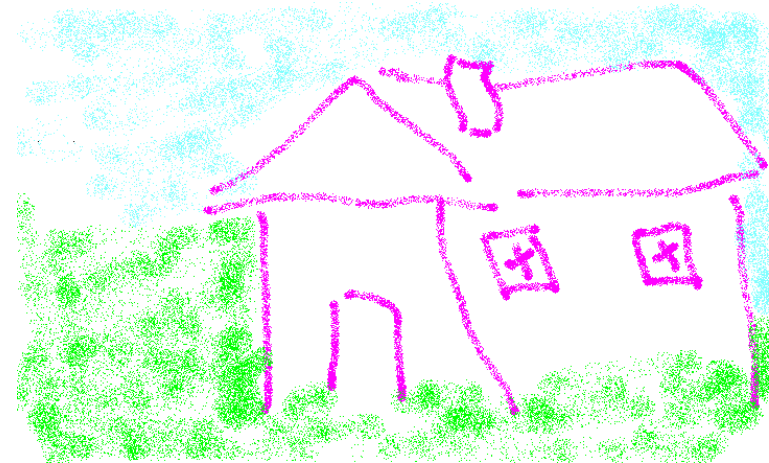
1. Respiratory infections
2. Skin infections
3. Psychosocial effects
4. Accidents



5. Arthropod borne infections

6. Rat infestation

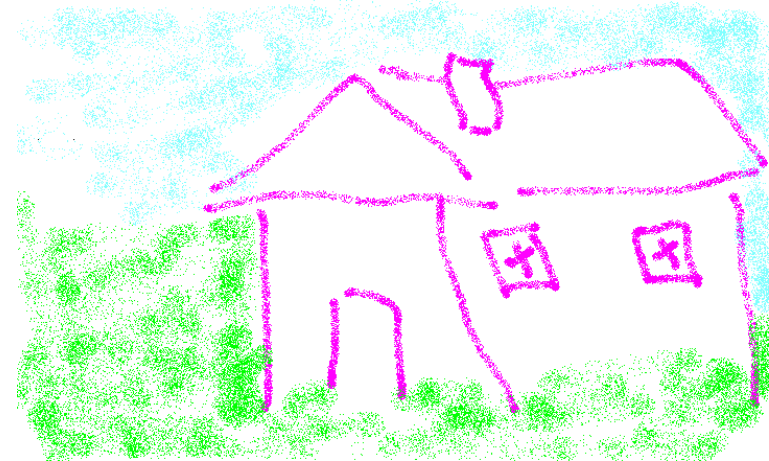
7. Morbidity and mortality



Statistical indicators of housing conditions:

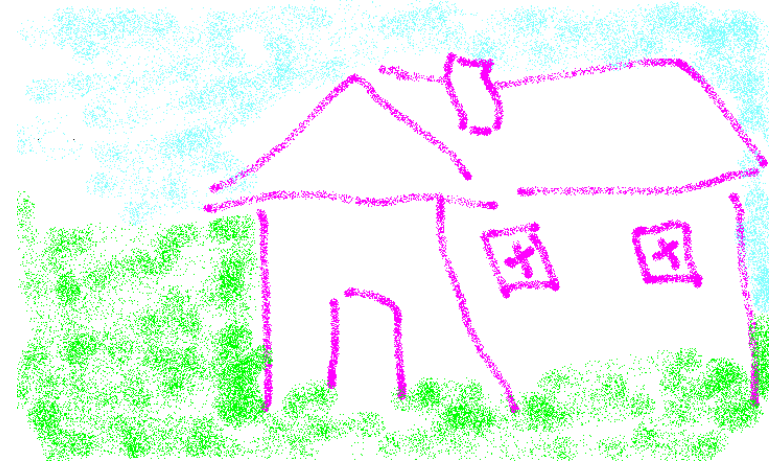
Census database:

- physical and economical aspects of housing (density of occupancy, floor space, cubic space, persons per room, environmental and sanitary conditions, cooking and refrigeration facilities, etc)



2. Social indicators:

- Indicators related to the frequency of illnesses
- Indicators related to comfort
- Indicators related to social pathology including freq. of suicides, neglected / abandoned / disabled youth or elderly in the neighbourhood, freq. of drug abuse, etc



Special housing needs:

Elderly and disabled: require accommodation that has been adopted

- to enable easier access (ramps, strong handrails, wide doors for wheelchairs)
- to facilitate storage and preparation of food (low placed cupboards and stoves with front fitted switches, which are inadvisable in houses having small children)
- special equip. for bathing and toileting: strong handrails and wheelchair access



Healthy communities / healthy cities initiative:

Provision of improved recreational activities

- Services for children and their mothers including basic education even to the mothers
- Aggressive action to eradicate urban wasteland, industrial pollution, toxic dumpsites and other forms of urban blight

