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## ARCHITECTURAL PLANNING AND CONSTRUCTIVE METHODS OF DESIGN OF WINDPROOF BUILDINGS.

Wind is one of the factors that determines the degree of operating comfort of the urban environment and formation of individual buildings, including housing. In areas where it is recommended to plan districts and neighborhoods to protect the area from the wind and provide normative duration of insolation, windproof buildings are widely used. Windbreaks reduce wind speed, changing its direction and divide the air mass into separate streams. Windbreaks are placed on the windward side area along the perimeter of the quarter, on a hill or on the territory. Aeration theory, using graphic-analytical methods for analysis of wind conditions, allows to calculate the area of the wind shadow of the house [2]. The average size of the wind shadow of the house is its  $\frac{4}{6}$  of the height. To increase the effect windscreen territory must repeat many windbreaks setting houses inside the quarter.

To improve the properties of windbreak houses the following architectural planning and constructive techniques are used.

The main architectural and planning techniques: design of curved houses in terms of the curvature of 120-150, allowing to neutralize front and side roller vortices [1], increased stratification of facades, corners of the building and the roof, gradually increasing the number of storeys in the direction of the wind, increasing the number of articulation building and roof extension possible to use stylobate part at the corners, reducing the area of translucent openings on the

windward side, applying reflecting surfaces, covering critical areas. The basic constructive windbreaks techniques: improvement of the quality of translucent holes filling, placing additional insulation and windbreaks membrane in the construction of external protections.

For low-rise apartment buildings the blocked construction with south oriented residential glazed balconies, verandas and balconies, pitched roof (often exploited) and gardening (evergreen trees) on the windward side is typical. For high-rise building it is typical to use multisection houses with wide body (18-24m). This saves up to 13% unit cost of heating. Planning features of the widebody houses are staircases without natural lighting or overhead natural lighting, kitchens without direct natural lighting that are situated deeper in the building behind translucent walls with a door, extended utility room area that does not require natural lighting, essential opening of translucent structures placed in the outer walls.

Also buildings with increased length and number of storeys relatively to the surrounding area are used. They are corridor houses, in which corridors are designed on the windward side and has a limited number of windows with triple glazing and living spaces are oriented to the cozy side [2].

#### Literature.

1. Polui B.M. Architecture and townplanning in strict klymate / B.M.Poluy. L.: Stroiizdat, 1989. - 300 p.
2. Timofeev M.V. Comprehensive assessment of climate housing development / M.V.Tymofyeyev, AV Sergeichuk, GV Shamrina. - K: KNUCA, 2015. - 128s.