Cuming
Appendix 2
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$$p_h = p_0(1-2{,}25577\times10^{-5}\times h)^{5{,}2559}, Pa \qquad (2.2)$$

where t_h, p_h is temperature, °C, and pressure, Pa, at the height h, m, respectively;

t_0, p_0 is temperature, °C, and pressure, Pa at the earth's surface, respectively.

3 Results

The calculated climatic parameters according to [4] are determined for the cities of Moscow, Khanty-Mansiysk and Vladivostok.
Using the data obtained, the graphs of the variation in the outside air temperature along the height of the building are constructed (Fig. 5,6).

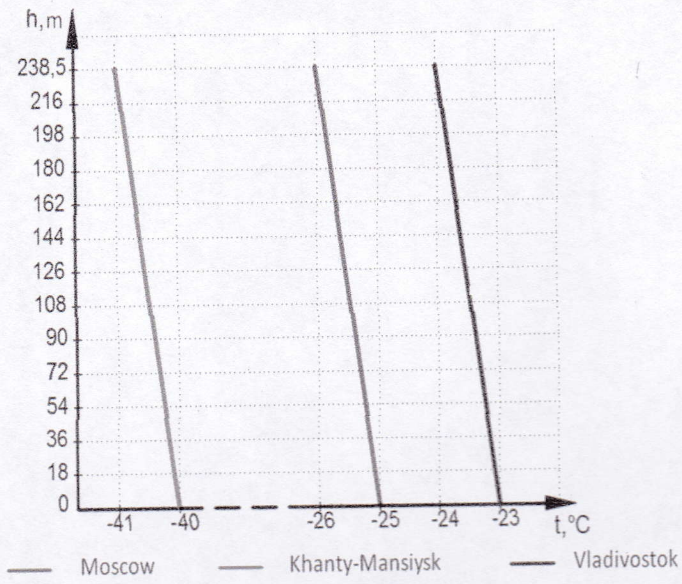

Fig. 5 - *Variation in the air temperature depending on the height of the Evolution Tower during the* coldest five-day period for the cities of Moscow, Khanty-Mansiysk and Vladivostok.

Various models are used to estimate the variation in the wind speed with respect to the height: the Ekman spiral, the logarithmic law, the power law. [5,6] These models estimate the wind speed V at height h if the wind speed V_0 is known at height h_0.

The power law of variation of the wind speed with respect to height has the form [5,6]:

$V_h = V_0(h/h_0)^a$, m/s (2.3)

where V_h is wind speed, m/s, at height *h*, m;

V_0 is wind speed, m/s, changing at the height h_0, m (wind speeds are measured at a height of 10–15 m, therefore h_0 = 10—15 m);

α is exponent depending on the type of terrain and found experimentally; it is recommended for centers of large cities to take $\alpha = 0{,}33$, for suburban areas α = 0,22, for open space α = 0,14 [6].