

Basic principles and advantages of the design / construction of cylindrical buildings up to 12 floors:



1. Introduction:

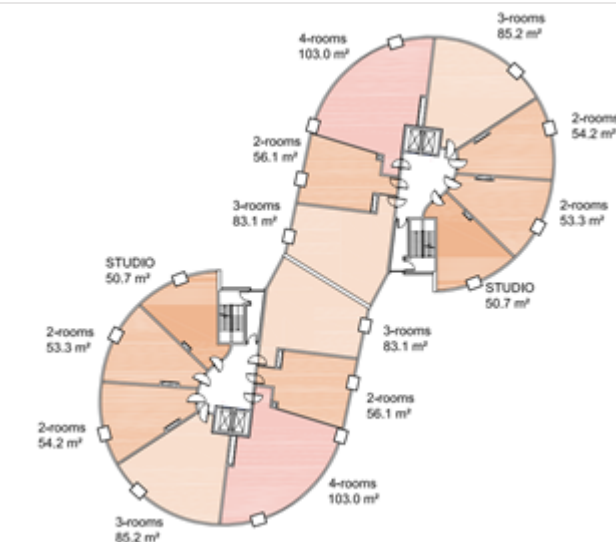
The use of buildings of non-standard shape - close to the circle in plan - contributes to the creation of a more picturesque landscape, bright and heterogeneous facades, a variety of designs of districts and quarters; the architect, the author of the project, has every opportunity to successfully solve planning tasks for apartments from economical one-room apartments, such as "Studio", to four and more - improved apartments with several bedrooms, separate bathrooms and rooms for collective use; the proposed method can be created at a higher level of comfort with an improved layout and houses of the economic segment, or even the so-called "social" houses with a small specific area of each apartment with an extremely large number of apartments.

2. Principles and advantages:

- **the facade area is 10-15% less** with a rounded (close to circle) plan shape compared to rectangular buildings (it must be remembered that the facade is one of the most expensive building elements due to its decoration, thermal insulation layer and laminated glazing);
- **overall losses of thermal energy are reduced** - a reduction in the area of the facade helps to reduce the area of heat transfer and lower operating costs for heating and cooling the building. The main wall insulator is QuadCore. The heat permeability coefficient of the facade for this project is $U = 0.15 \text{ W/m}^2\text{K}$, glazing $U = 0.75 \text{ W/m}^2\text{K}$;
- **concrete consumption is minimized, since the HAD fixed formwork allows you to limit the main bearing thickness of the floor to 80 mm** - with a bearing capacity of 5 kN/m^2 , the weight of the frame with monolithic filling of the elements does not exceed 280 kg/m^2 (a structural design and design of an economical supporting frame of a cylindrical type have been developed buildings);
- **installation in any weather and in any climatic conditions** (year-round construction) - the installation of the frame and the installation of panel facades can be carried out under any weather and climatic conditions, which is a great advantage in the construction time in the Far North;
- **the terms of the facade and the "sealing of the volume" of the building are much less than traditional technologies;**
- **the ratio of the total area of apartments to the rest of the building (floor) is close to 85% by 15% (i.e., the utility coefficient is close to 0.85).** This is a very high indicator of the usefulness of the layout, which is possible due to the radial arrangement of apartments around one central node of vertical communications.

3. Additional features:

- maximum factory readiness for a complete set of a building. Packaging and delivery to the inaccessible areas of the Far North in containers. **Installation on a rotational basis up to 8 months (12 floors);**
- **the same principles of facade systems can be successfully used for the construction of linear (rectangular) buildings.** The use of hinged facades from panels of the TBS group allows to improve the appearance of buildings, reduce the weight of the supporting frame and significantly reduce the cost and construction time;
- **buildings of cylindrical shape are perfectly combined with linear buildings.** This creates new opportunities for solving architectural-visual, town-planning and economic planning tasks in the design of an entire district or quarter.



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