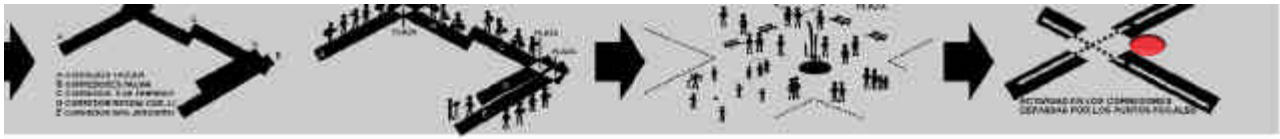

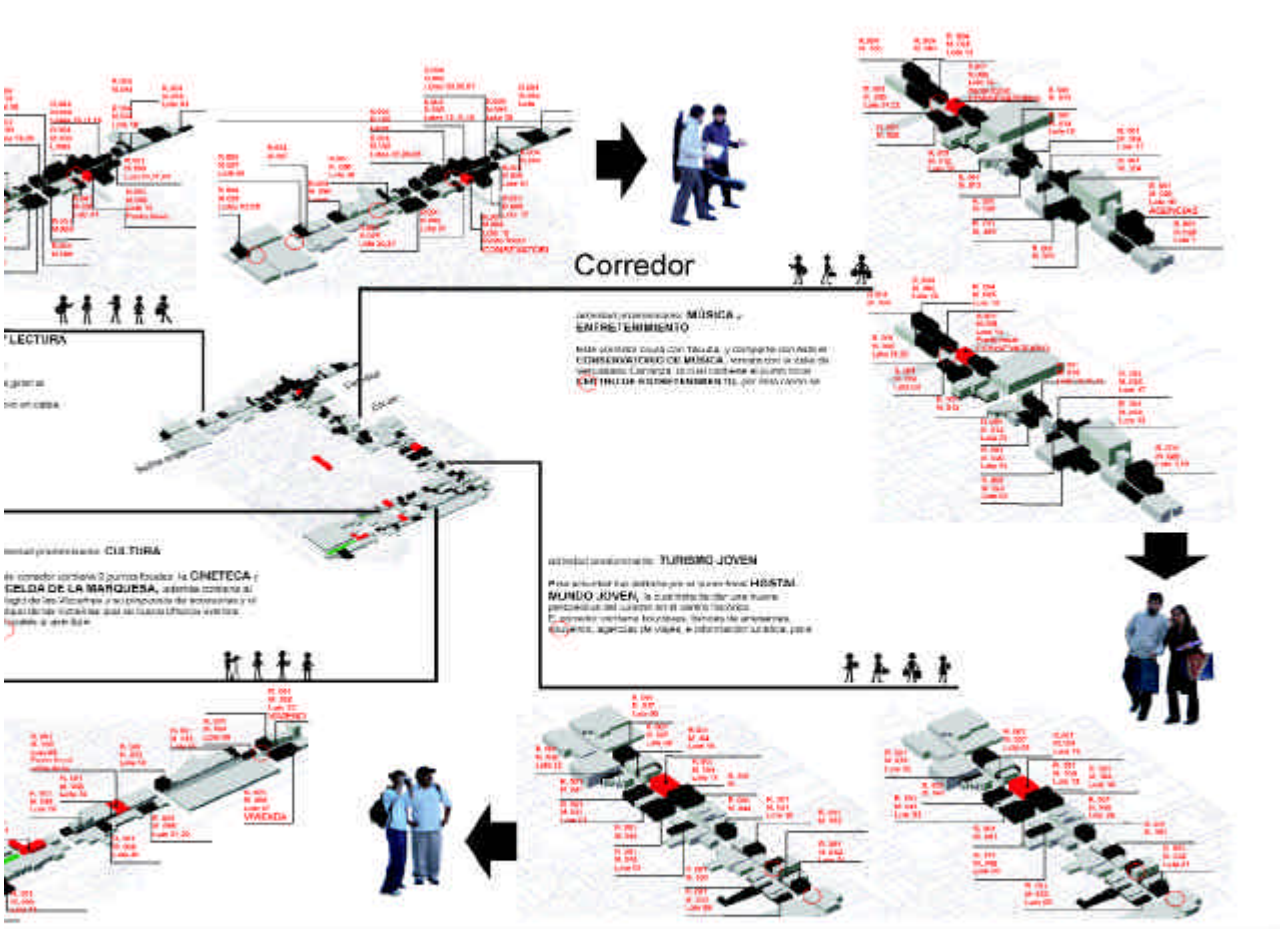

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WARM ROOF DESIGNING

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The “Warm Roof Designing & Construction of Penthouses with the Independent Heat Supply” is recognized, that one of perspective directions of reconstruction of building is the superstructure of mansard floors of existing buildings. Similar reconstruction is economic, as providing city an additional living and office space, does not require allotment of new sites under construction, engineering preparation of territory, lining of networks warmly and water supply, etc. The Superstructure of mansard floors can become even more effective in conditions of Vladivostok, by virtue of its original climatic conditions, unique for large cities of Russia. Differing enough in the severe winter, the city is literally filled with a solar heat. For a year in the south of Primary region 1681, 3 kw-h of solar radiation on square meter act, and its big part falls at the winter period.In long term introduction energy effective architecture of penthouses is capable to exclude completely additional loadings on city networks of a heat supply at condensation of fund of existing building. And in conditions of dense city building the roof of a building, as a rule being outside of a zone dark patch of the next houses, is perspective object of introduction of solar technologies. Using cities of technology already mastered by an architectural - building complex it is possible to solve the following problems: 1. To provide all-the-year-round independent hot water supply of built on penthouses on 80 %. (20 % electro heating under the night tariff in cloudy weathers). For hot water supply of family from 3-4 people it is necessary about 5 sq. meters of the roof occupied with collectors. Therefore pitches of the roof enough the big area at its orientation to the south can provide with hot water the year round not only new settlers, but also tenants of the top apartments. 2. To cover on 30 % (up to 50 %) requirements for heating penthouses, using the same solar collectors of a water heat supply located in a plane pitch of a roof. 3. Pawning in architecture of penthouses only a principle of direct solar heating of spaces through mansard windows and antiaircraft lanterns, in addition to provide from 30-50 % and more requirements for heat in the winter. The technology of direct solar heating is based on "hotbed" effect glass package with heat insulating a film. Saved up for a day a thermal file (a stone wall behind glass, a floor - ceramic granite on ferroconcrete plate - or a massive fireplace under an antiaircraft lantern) solar heat provides preservation of comfortable temperatures in a room at night. Efficiency of technology depends on the area, orientation and a corner of an inclination of apertures, a material and volume of a thermal file, planning decisions of a penthouse and heat insulation of a roofing pie. Practically this technology can be named technology of competent architectural designing. Basic elements of solar installations of a water heat supply - built in a plane of a roof the collectors providing warming up of the heat-carrier and a storage container of hot water. The "know-how", installation and operation of domestic installations are developed by Institute of Problems of Sea Technologies FEO the Russian Academy of Science since 1990.In the market of city since 2002 collectors of German firms ESTEC and SCHUCO - world leaders of solar technologies also are submitted. Ready system COMFORT on the basis of 6 flat collectors (a working surface about 9 esq.), Providing 80 % of expenses for hot water supply and up to 50 % of expenses for heating of family from 2-5 person, costs 9020 euros, more effective system on the basis of 5 vacuum collectors - 14000 euros.