I SOMAX Building and Climatization Technologies

4th Euro-Indi

City Vision: Reinventing Dynamic and Sustainable Cities
with special emphasis on Green Energy

Technology of construction of energy autonomous buildings
and thermal modernization of buildings

®isomax
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International Board for Science and Business, Zürich

Energy consumption:

Typical houses are constructed in Europe,
the demand for heat about 90 - 120 kWh / m² per year.

Good homes are energy efficient heat
demand of 40 - 70 kWh / m² per year.

Passive houses are built so that their need for energy
is less than 15 kWh / m² per year.

At a price comparable with those of traditional
building systems, ISOMAX houses
only need 4 - 8 kWh / m² per year.

A Simple but powerful technology!

Solar absorber

Temperature
barrier

Ventilation system
with heat recovery

Seasonal solar energy storage
And near surface geothermal energy

1. Solar absorber

2. Temperature barrier

2. Temperature barrier

the patented ventilation system with 96 - 98% heat recovery:
the ground canal reverse flow PIPE-IN-PIPE SYSTEM.

3. Ventilation system with heat recovery

4. Seasonal solar energy storage and near surface geothermal energy

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Luxembourg

Portugal

Hotel in Setagaya /Tokyo, Japan

Germany

Chengdou, China, 2003

Medical School, Kyoto, Japan

400 ISOMAX housings in URI,
Kashmir, India

Structure exterior refurbishment

Vertices of a national program for the thermal upgrading of existing buildings for the Federal Republic of Germany

Goal:
• autonomous zero-emission approaches to our cities and towns
• climate Neutrality
• security of supply and independence of the energy price
• independence from fossil fuels by using renewable energy
• decentralized structures for strengthening regional value chains
• cost advantages through decoupling of energy and commodity prices
• decentralized structures for economic independence and thereby streng-thening civil and democratic structures

Costs and financing:
The above benefits are essential to a national energy thermal modernization of all existing buildings in Germany costs about 500-600 billion to meet (approximately 32 million housings X Euro 18.000 .- / housings).

The funding can be achieved entirely due to energy savings and the use of free solar or geothermal heat
energy. That means no burden on citizens or the state - with additional huge benefits for industry, SMEs,
handicrafts, coupled with an ap-preciation of real estate.

Advantages of a major program for the National Thermal upgrading of building stock

• Short-term creation of several hundred thousand jobs, with all its positive effects on social funds and tax revenues. The energetic thermal modernization of all existing buildings of the Federal Republic guarantees a long-standing full employment, with simultaneous economic boom of related industries and manufacturer enterprises. The inclusion of technical universities and institutions, architectural and engineering organizations improve their international competitiveness.

• The national CO2 savings and climate change objectives are achieved not only in the short term but also significantly surpassed.

• The program is a crucial step toward national energy self-sufficiency. The entire value chain of energy production is scored one of the largest sectors of primary energy consumption in the country and replaces expensive imports.

• The destitute citizens always suffer more from the rising and hardly predictable future energy costs. Due to the thermo-modernization of public housing just these citizens and the social funds can be greatly relieved.

• The thermal upgrading with ventilation systems brings a much-improved indoor climate. This is particularly for schools and children's daysides of importance and will significantly reduce absenteeism.

Sources:

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