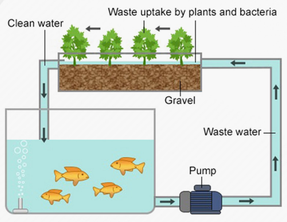
GREEN SOLUTIONS AND TECHNOLOGIES

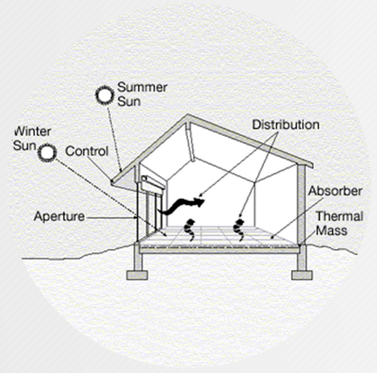


ORGANIC FARMING AND HORTICULTURAL FOOD PRODUCTION

- Adoption of ecological principles for the design of food and natural goods producing landscapes
- Construction of Polydomes (also with pre-existing structures) which are closed and controlled intensive polyculture food production systems
- Extensive use of other organic farm methods such as aquaponics - a mixture of aeroponics and aquaculture which exploits the symbiotic relationships formed between the two systems for ecological cultivation of veggies and fish.

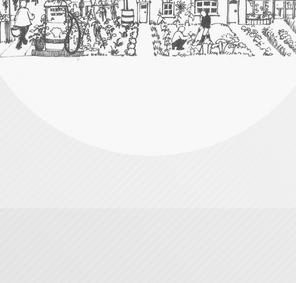
ECOLOGICAL AND NATURAL BUILDING MATERIALS AND METHODS

- Use of natural and locally available construction materials such as earth and straw.
- Use of recycled objects and waste, such as car tires and shipping containers, as construction materials.
- Design of buildings according to bioclimatic principles in order to save energy on heating and cooling and to adapt the building to it's surroundings.
- Use of engineered lumber, with wood originating from sustainably managed forests, as structural material for tall buildings.



TECHNOLOGIES FOR THE SAVING AND PRODUCTION OF RENEWABLE ENERGY

- Use of passive solar design for buildings.
- Use of on-site technologies for the generation of renewable energy such as PV panels, wind turbins, geothermal heat pumps, etc.
- Use of biofuels for public and private transportation vehicles and for the generation of electricity.
- Recycling of used cooking oil for the creation of biofuels.
- Use of local CHP plants and district heating distribution systems.



WATER AND NUTRIENTS SAVING AND RECYCLING TECHNIQUES

- Use of biological white and grey water treatment systems, such as constructed wetlands, and the reuse of these waters as a non-potable water resource
- Collection of rainwater for reuse as a non-potable water resource and for restitution to the natural cycle
- Use of compost toilets for the recycling of nutrients found in human excrements
- Use of compost for the recycling of nutrients found in organic waste

REDUCTION OF DEMAND FOR AND CONSUMPTION OF ENERGY, WATER AND NATURAL RESOURCES.

- A shift from high-tech technologies in production and management of goods, foods and energy, to lo-tech and intermediate technologies for the reduction of complexity and energy demand.
- A shift from a reductionist sector-divided economy into holistic small-scale integrated systems and economies which merge production with living.

PRESENTATION BOARD N. 3 - GREEN SOLUTIONS AND TECHNOLOGIES

Politecnico di Milano - scuola di architettura e società
Architectural planning (progettazione architettonica) master's degree course

Degree dissertation: *Urban-farm eco-communities - a proposal for a new human settlement typology for resolving the global environmental crisis*

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