

Renewal of the Technion Ecological Garden : "Big" Ecological Ideas in a Small Scale Architectural Project



Nava Henig Sever ¹, David Renov ², Noam Austerlitz ² and Dina Yogev ².

1. The Ecological Garden, Faculty of Civil and Environmental Engineering, Technion, Israel

2. "Bustan Olami" - Ecologically oriented team of arch., town planners, landscape designers and builders, Israel.

The Ecological Garden of the Technion serves as an environmental center which contributes to the awareness of wide communities in Israel, by means of research, experience and demonstration of ecological and environmental issues.

The garden's guidelines are founded on a holistic ecological approach which claims that humans are part of the global system. Hence, humans have a responsibility to preserve biodiversity and environmental resources for the sake of all living organisms, including mankind. Principals of sustainability are implemented and demonstrated in the garden.

Renewing the garden and reconstructing a small scale building within it, in 2004/5, demonstrate this sustainable approach. The whole project and it's details have been designed along ecological design principles. Building the pavilion and entrance-yard in the Ecological Garden, combining traditional and modern materials - metal, plastic, earth, straw, reed, water and light - creates a spectacular experience, celebrating the elements, both natural and manmade.



Ecological visitors center in the Technion, Haifa



Ecological applications in the project

- Renovation of the garden buildings and reusing existing materials.
- Secondary use of waste as building materials
- Energy efficiency: Insulation, Ventilation, Natural daylight.
- Water catchments and reusing
- Demonstrating organic and traditional agriculture methods.

Design principles:

- Reducing negative ecological footprint
- Demonstrating sustainable architecture methods
- Creating a 'live laboratory' for ecology in action
- Using passive solar climate control methods
- Using the pattern language of the 'Bustan'

The origin of the word "bustan" comes from Persian and means "a fragrant place".

'bustan' is a cultural, middle eastern landscape-pattern that includes interwoven life-sustaining systems: energy, earth, water, vegetation and living beings.



'Bustan' serves as an ecological buffer between Nature and City



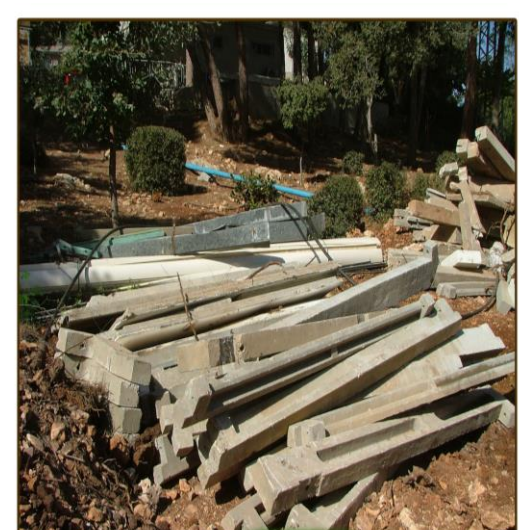
Traditional landscaping – terraces and stairs



Rain water cisterns



Spilled Drinking water catchment

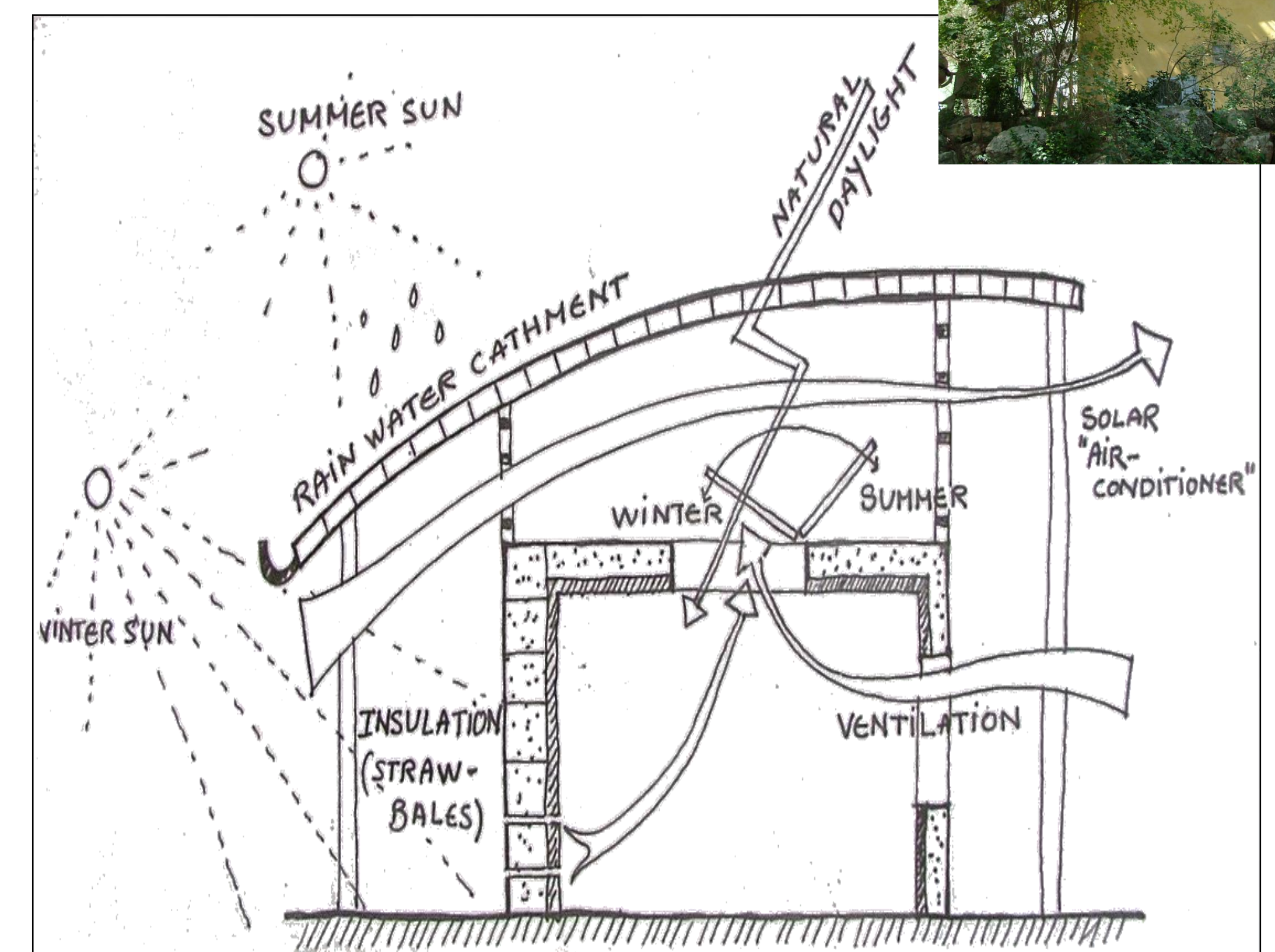


Reusing concrete tiles, concrete pre-fab', glass, used tires.

Earth bricks - plaster- Flore ,straw bale, reed.

Recycling building material

Using organic building material



Schematic section of the structure