“AIR TREE” - ECO-BOULEVARD
Vallecas, new suburban development of Madrid

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'I should be pleased to present it also to TensiNet Symposium 2007 with one of the architects if he is available' Javier Tejera

Figure 1 (tejera_02.tif)

The proposal for the Eco-boulevard of Vallecas can be defined as an operation of urban recycling that consists of the following actuations: the installation of three social revitalizing “air trees”, placed along the existing urbanization; the densification of trees within the existing concourse; the reduction and asymmetric disposition of the traffic routes; and small interventions within the existing urbanization (such as perforations, paint, etc.) that help to achieve a reconfiguration of the executed urban development.

The three pavilions, or “air trees” as they are called, function like open structures to multiply resident-selected activities. Installed in the non-city as temporary prostheses, they will be used only until air-conditioned spaces are no longer needed, when the area becomes “fixed”. When a sufficient amount of time has passed, these devices should be dismantled, leaving remaining spaces that resemble forest clearings.

Figure 2 (tejera_09.tif)
The air trees are lightweight structures, easily dismantled, and energetically self-sufficient: they only consume what they are capable of producing by means of systems designed to capture and use solar photovoltaic energy.

The simple climatic adaptation systems installed in the trees of air are of the evapotranspirative type, which is often used in greenhouses. This aerotechnical practice or artificial adaptation is not a part of a commercial strategy. On the contrary, it tries to undo the leisure – consumption binomial, and reactivate the public space by creating climatically adapted environments (8ºC–10ºC cooler than the rest of the street in summer), where citizens will be once again active participants in public spaces.
Air is inhaled in the top of the chimneys and freshened by action of water micronizers and nebulizers. By means of a ventilator, powered by the energy from the photovoltaic cells, the air is impelled through these chimneys, being expelled through nozzles at the bottom to the interior of the tree.

The chimneys are sixteen PES/PVC membranes, inner thorus-shaped, patterned and prestressed in order to resist wind action (even without the outer lobes).

Surrounding them are sixteen lobes made of double layered polypropylene shading mesh. The outer meshes of these lobes have different shading percentages (made of aluminium sheets), depending on the façade orientation; the inner is a typical greenhouse mesh. They are cylindrically shaped, prestressed and anchored to the structure by means of steel bars inside pockets and Webbings.

This proposal tries to affect the problem of the design of urban spaces as places for life, being one of the characteristics of the Mediterranean cities. It has been cofinanced by the Municipal Company of Housing (EMV) of the City Council of Madrid and the European Union within program LIFE-2002 (ENV/E/000198).

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