Performance

→ High Energy-efficiency & Sustainability

SEASONAL ADAPTABILITY

A design cooled and heated by a large sweeping cross ventilation system, with high-efficiency enthalpic recovery heat reclaim. A heat recovery ventilation system maintains air quality inside, with constant renewal of clean air and extraction of stale air, keeping the pleasant climate year-round using an adapted hygrometer at ambient temperature for an efficient heating and cooling system. The enclosure system has large retractable glazed spaces that allow occupants to live an outdoor life when outside temperatures are pleasant for much of the day Automated sliding lattices protect these gaps to ensure reduced transmittance (U) of the façade during excessive sun and when the temperature falls at night.

SYNERGY OF THE MIXED STRUCTURAL SYSTEM

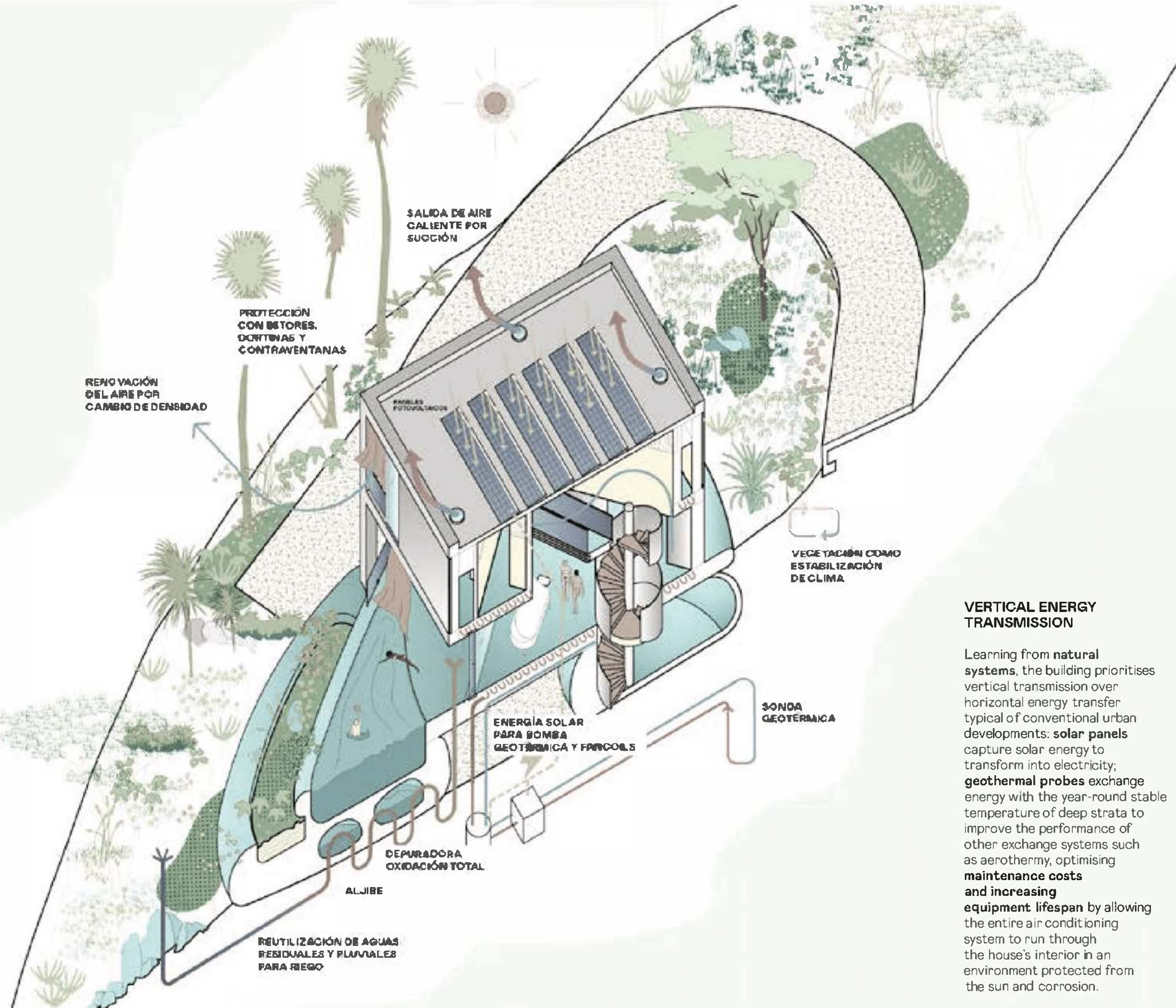
The mixed concrete and wood structure has advantages over single-material wood or concrete: it creates a large, strong diaphragm while reducing weight. The unique concrete solution reduces the structure volume typical of wood-only technology solutions to counteract the characteristic seismology of this geographical area. Wood comes from sustainable sources, that is, cultivated and properly managed forests according to ecological criteria, a zero-km source close to the counter-laminate factory, reducing transport costs and producing zero emissions.

MAINTENANCE AND SERVICE LIFE

Pipe systems are accessible for maintenance and repair, for which they are arranged and housed in accessible gaps.
The system ensures that all the inboard joins with the horizontal network are easily accessible for inspection, cleaning and repair when necessary.

SMART BUILDING

A concept where installations and systems (airconditioning, lighting, electricity, telecommunications, multimedia, etc.) are designed for integrated, automated management and control to improve energy efficiency, safety and comfort. Everything is simple to use and accessible, and sanitary conditions have been prioritised to prevent spreading of contagious diseases. Continuous monitoring of system and equipment performance detects deviations in performance, thus improving maintenance and increasing the useful life of the installations while guaranteeing effective service. Corrective actions through preventive maintenance lower operating costs and downtimes due to corrective actions are also reduced



VERTICAL ENERGY TRANSMISSION

Learning from **natural systems**, the building prioritises vertical transmission over horizontal energy transfer typical of conventional urban developments: **solar panels** capture solar energy to transform into electricity; **geothermal probes** exchange energy with the year-round stable temperature of deep strata to improve the performance of other exchange systems such as aerothermy, optimising **maintenance costs and increasing equipment lifespan** by allowing the entire air conditioning system to run through the house's interior in an environment protected from the sun and corrosion.